

JAINGSU AISIKAI ELECTRIC CO.,LTD

YANGHZOU AISIKAI AUTOMATION TECHNOLOGY CO.,LTD

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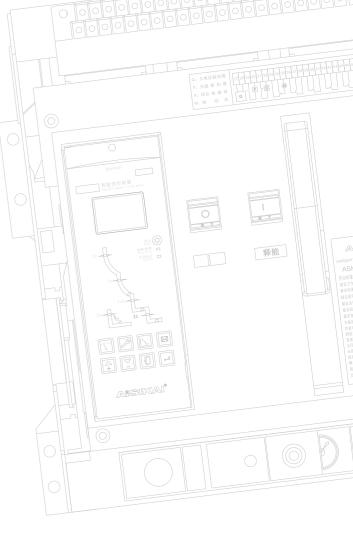
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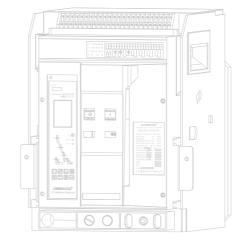
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AIR CIRCUIT BREAKER **SELECTION GUIDE**



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COMPANYPROFILE

Since established in 2007, JIANGSU AISIKAI ELECTRIC CO.,LTD has been committed to the R&D, manufacture and marketing of the high-quality low voltage electric switch. Our product line covers level I . II . III power distribution field . We are awarded as the "National High Tech Enterprise" and "Contract-respecting and Promise-keeping Enterprise" and own UKAS ISO9001 Quality Management System Certification , the European Certification CE and SGS Global Qualified Supplier Certification . So far , We have several invention patents , utility model patent,appearance patent All products have Chinese Compulsory Certification CCC . From 2014 , we have been recognized as "Yangzhou City Engineering Technology Center"and" Chinese Adopting International Standard Unit".

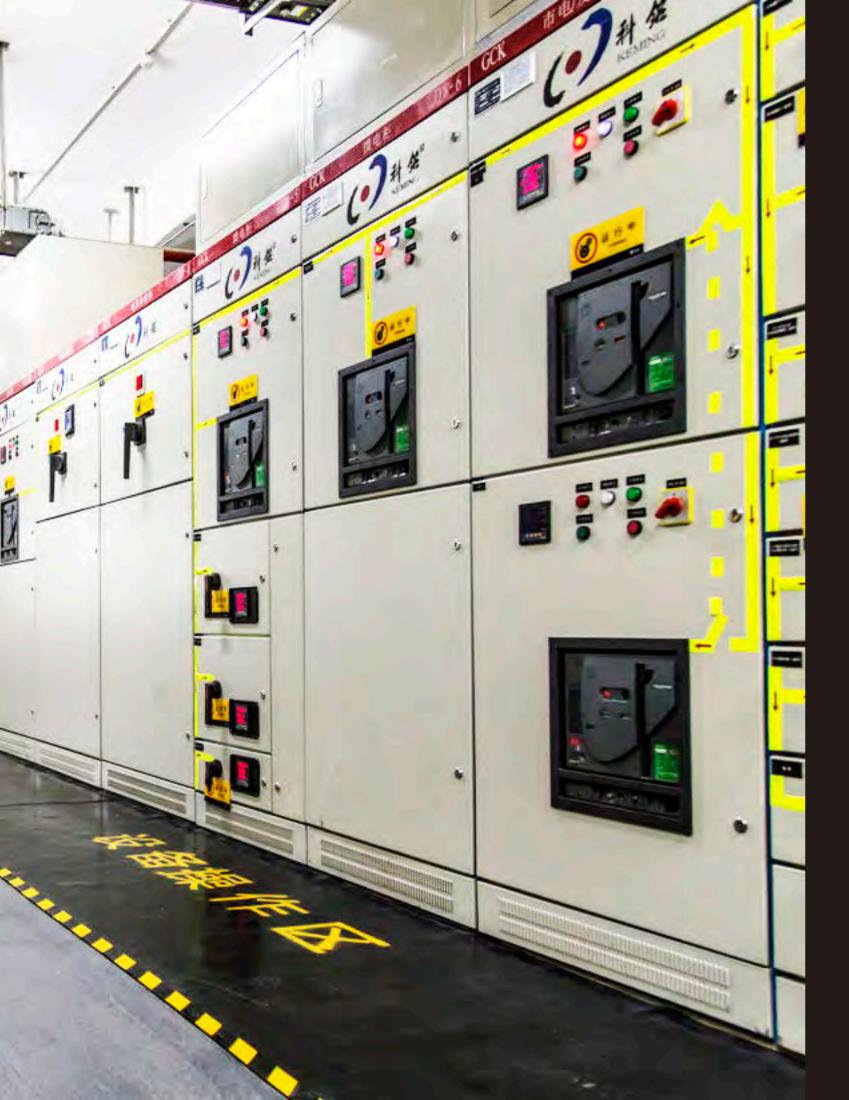
"QUALITY 、SERVICES 、REPUTATION 、INNOVATION" is AISIKAI company everlasting enterprise development concepts , we actively pursue progress , always standing inthe customer's point of view and improvement, we believe, AISIKAI IN your support and love, will flourish, vibration of wings and fly!







ACB







Intelligent Universal Circuit Breaker

ASKW1 & ASKW2 series frame type universal circuit breaker is the first product of AISIKAI in the low voltage distribution, from 200A to 6300 A. Self-developed multi-functional intelligent liquid crystal controller, the Chinese menu in Windows structure makes the man-machine interface very friendly and easy to use.

Over the years, we have been focusing on the design, R&D and professional manufacturing of low-voltage electrical products, with customer satisfaction and expectations as the guide. Continuously improve product performance on the premise of safety and reliability. Advanced automated assembly line ensures timely delivery of products to customers. Strict quality standards ensure that every product is 100% qualified.







Standard

GB14048.2 IEC60947-2















Wide range of applications

ASKW1 & ASKW2 series frame type universal circuit breaker load IEC/GB related standards, and through CCC certification, can be applied to AC 400V, AC 690 various power grid systems.

Full protection function

ASKW1 & ASKW2 Series Frame Universal Circuit breaker Assembly of a new intelligent LCD controller, can be set long delay protection, short delay (anti-time limit/fixed time limit) protection, instantaneous protection, grounding protection, load monitoring, MCR & HSISC Protection, regional chain protection and other functions.

Perfect measurement function

New Intelligent LCD controller with four-phase current measurement, grounding current measurement, thermal capacity measurement, threephase line voltage measurement, average line voltage measurement, three-phase voltage measurement, power frequency measurement and other functions.

Intelligent Communication Function

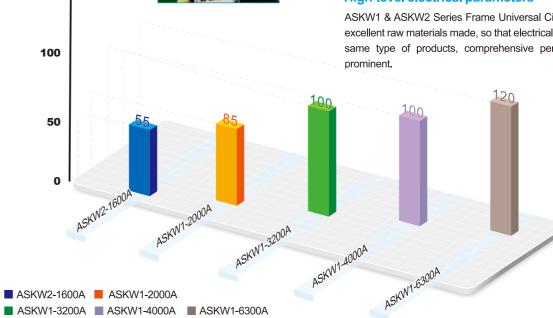
For users who need system integration, ASKW1 & ASKW2 Series frame Universal circuit breaker can be assembled communication type LCD controller, using MODUBUS-RUT Standard communication protocol, can upload circuit breaker operating state electromechanical parameters, view running events and maintenance information, etc.

Easy Installation

The external volume can be matched with the general standard cabinet body. Drawer type or fixed installation can be selected. The direction of output copper bar can be chosen in horizontal or vertical direction. For special occasions, lengthened copper bar can be selected.

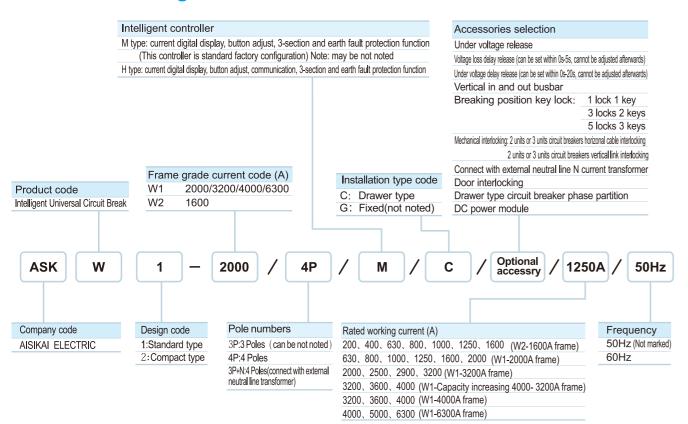
High-level electrical parameters

ASKW1 & ASKW2 Series Frame Universal Circuit breaker selection of excellent raw materials made, so that electrical performance beyond the same type of products, comprehensive performance is particularly





ASKW Series Intelligent Universal Circuit Break Quick Selection Table



Qualification documents















ASKW1 Series Intelligent Universal Circuit Break

PRODUCT OVERVIEW



• ASKW1 series intelligent type universal circuit breaker(hereinafter referred to as "circuit breaker") is suitable for AC50Hz/60Hz, rated voltage 400V, 690V, rated current 630A-6300A of the distribution network used to distribute power and protect circuits and power supply equipment against overload, under-voltage, short circuit, single phase earth fault. Circuit breaker has intelligent protection and isolation function. Accurate selective protection, improve the reliability of power supply, avoid unnecessary power outages. Circuit breaker has open communication interface for four remote, meeting the requirements of centralized control of automation systems.

CLASSFICATION



Classify by installation method

Fixed type; drawer type

- Classify by operation method
 Electric operation; manual operation (for inspection and maintenance)
- Classify by pole numbers

3 poles; 4 poles

Classify by wiring method

Upper in and lower out; lower in and upper out; horizonal in and out; horizonal extension in and out

Classify by intelligent over current controller performance

H type(communication function); M type (ordinary type)

Application field







Civil

cial In

Standard

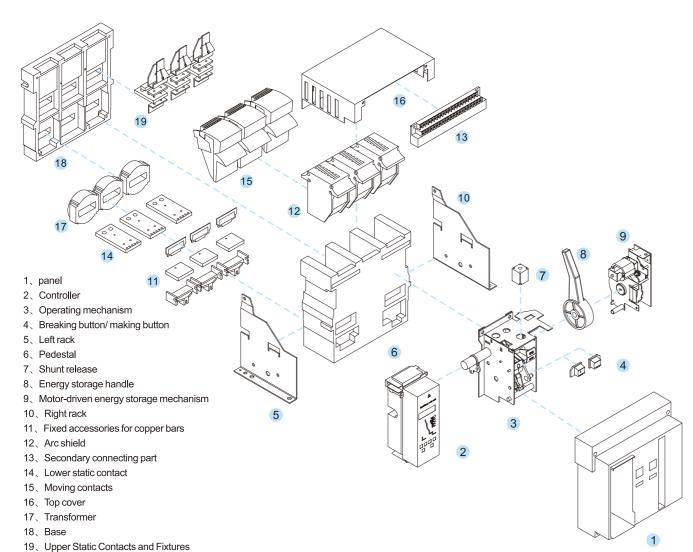
GB14048.2 IEC60947-2

Normal operating conditions

Category	Requirements
Altitude	≤2000m
Temperature	-5°C-+40°C, 24H average not more than +35°C
Class of pollution	Ш
Installment type	III , Inm 1250A circuit breaker: Ⅳ
Air Conditions	Mounting site, relative humidity not At exceed 50% at the max temperature of $+40^{\circ}$ C, higher relative humidity is allowable under lower temperature, RH could be 90% at $+20^{\circ}$ C, special measures should be taken to occurrence of dews
Installation conditions	Installed in the absence of significant shock and shock of the place. The magnetic field near the installation site should not exceed 5 times the magnetic field in any direction
Installation	Horizontally
Contact line	Wiring reversely

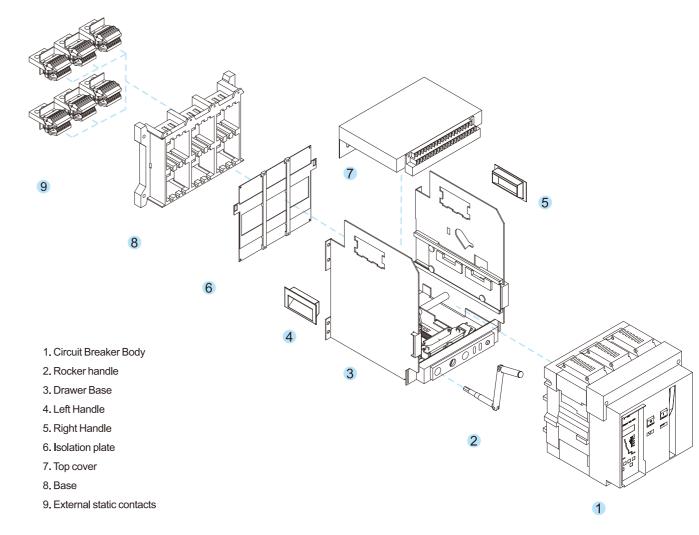


Structure Introduction-Fixed type



Architectural Overview	Contact system	Operating mechanism	Undervoltage release	Excitation (Switching) release	Energy Releasing (Closing) Electromagnet	Dynamic energy storage mechanism
The circuit breaker is a modular structure with compact structure and small volume. It has the characteristics of three-dimensional separation. The contact system is closed between two insulating boards with separation structure, and each contact is separated to form a small room. Intelligent controllers, manual and electric manipulators are in front of each other to form their own independent units. Undervoltage release, shunt release, closed electromagnet and auxiliary contacts are installed on the upper part of the circuit breaker. If one of the units is broken, the whole unit can be removed and replaced. Circuit breaker buttons and operations require only a small amount of space. The "lest" or "separation" position has good safety.	Each phase-moving contact system is installed in a small insulated room, above which is an arc extinguishing chamber. The contact system completes the closure and breaking action through the connection between the connection prod and the mechanism spindle. Each phase moving contact adopts 7 pieces of contact parallel form, which reduces the electric repulsion and improves the electric respulsion and improves the electric stability performance. Contacts are paired with new arcresistant materials, and the contact resistance is stable. After breaking short-circuit current, the contacts will not overheat and cause excessive temperature rise.	Circuit breaker operation mode has both manual and electric. The circuit breaker is closed by spring energy storage (there is pre-storage energy), dosed speed and electric or manual operation Speed Independent. Circuit breaker uses cam to compress a set of springs to achieve energy storage purposes, and has the function of free release. The circuit breaker has three operating positions, energy storage, closure, disconnection position. Operating mechanism is composed of free release mechanism, energy storage motor, operating handle and so on, forming separate units from each other, which is easy to replace and repair.	Undervoltage trippers are divided into two types: undervoltage instantaneous trippers and undervoltage delay trippers. The under-voltage delay tripping device adjusts the delay time through the switch on the under-voltage delay device. The setting values of the delay time are 0.3s, 0.5s, 1s, 3S and 5S. In the 1/2 delay time, when the power supply voltage is restored to 85% Ue and above, the circuit breaker continues to open; The power supply voltage can disconnect the circuit breaker when it is 35%-70%ue; The circuit breaker cannot be closed when the supply voltage ≤35%ue.	The shunt tripper can operate remotely and disconnect the circuit breaker. Within the range of 70%~110% of the rated control power supply voltage switching (Us), the shunt tripper can make the circuit breaker switching off.	After the end of the motor storage energy, the closing electromagnet can release the energy storage spring force of the operating mechanism in an instant, so that the circuit breaker closes quickly. Within the range of 85%-110% of the rated control power supply voltage (Us), the closing electromagnet can make the circuit breaker close.	The circuit breaker is operated by an electric energy storage mechanism, which can store energy either manually or electrically.

Stru结构外络rqueton-Drawer Type



Structure overview	Connection mode	Working locations	Mechanical chain
Drawer type circuit breaker consists of circuit breaker body and drawer seat. There are rails on both sides of the drawer seat, an active guide plate on the guide rail, and the circuit breaker body Rack falls on the left and right guide plate.	The drawer type circuit breaker is connected to the main loop by inserting the bridge type contact on the drawer seat by the bus line in the circuit breaker's body.	Shake the lower part of the drawer seat to shake the style handle, can achieve the drawer type circuit breaker three working position (rocking style handle next to the position indication). "Connection" position: both the main circuit and the two-time circuit are connected. "Test" position: The main circuit is disconnected and separated by an insulating separator. Only the secondary circuit is connected, and the necessary action tests can be carried out. "Separation" position: the main circuit and the secondary circuit are all disconnected. In the "separation" position, if the breaker body is to be removed, the shaking handle must be removed.	Drawer circuit breakers have mechanical interlocking devices, which can only be closed in connection or test positions. It cannot be closed in the middle of the connection and test.





TECHNICAL PARAMETER AND PERFORMANCE

Form 1 Circuit Breaker Basic Parameter

Model	Shell grade rated	Rated current	Rated impulse withstand	Ue V	Rated limit short circuit brea	aking capacity I cu kA o-co	Rated operating short circuit b	reaking capacity los kA o-co-co	Rated short time withstand cur	rrent Icw KA(1s) delay 0.4s o-co	Power lo	ss (In) W						
Model	current Inm A	In A	voltage Uimp kV	OE V	400V	690V	400V	690V	400V	690V	Fixed	Drawer						
		630									40	80						
		800									60	130						
ASKW1-2000	2000	1000			85	55	65	55	65	55	90	205						
A3KW 1-2000	2000	1250									90	205						
		1600									140	310						
		2000			4.0.5011	4.0 5011	40 5011						170	310				
		2000	12	AC 50Hz /60Hz 400V	/60Hz		70	80	70	170	400							
ASKW1-3200	3200	2500	12			80				260	510							
A3KW 1-3200	3200	2900								320	650							
		3200		690V							420	760						
		3200								430	780							
ASKW1-4000	4000	3600			100	70	80	70	80	70	440	790						
		4000									450	800						
		4000									12	225						
ASKW1-6300	6300	5000	12	120 120 100 100 100							120	120	100	100	100	100	12	250
		6300									16	625						

^{1.}Arc distance is zero. 2. In this form, the breaking capacity is same for upper in or lower in

Form 2 The derating of circuit breaker at different temperature

Allowed continuous working co	Ambient temperature	+40℃	+45℃	+50℃	+55℃	+60℃	+65℃
		630	630	630	630	610	610
		800	800	800	800	800	800
	ASKW1-2000	1000	1000	1000	1000	1000	1000
	A3KW1-2000	1250	1250	1250	1200	1150	1150
Applicable standards		1600	1600	1500	1500	1300	1300
		2000	1900	1900	1800	1700	1650
GB/T 14048.2		2000	2000	2000	2000	2000	2000
IEC/EN 60947-2	ASKW1-3200	2500	2400	2300	2200	2200	2200
	ASKW1-4000	3200	3000	3000	2800	2800	2600
		4000	3800	3600	3400	3200	3200
		4000	4000	4000	4000	4000	4000
	ASKW1-6300	5000	5000	5000	4800	4800	4800
		6300	6000	5600	5400	5200	5100

Form 3 The derating of circuit breaker at different altitude

When the altitude is higher than 2000m, the insulation characteristic, cooling characteristic, pressure etc. In atmosphere will change, the performance can be revised according to the form below:

a Voltage

Altitude(m)	Power frequency withstand voltage(V)	Insulation voltage(V)	Rated working voltage(V)
2000	2200	1000	690
3000	1955	800	580
4000	1760	700	500
5000	1600	600	400

b Current

D. Current							
Altitude(m)	2000	2500	3000	3500	4000	4500	5000
Rated working current(le)	le	0.93 l e	0.88 l e	0.83 l e	0.78 l e	0.73 l e	Must contact the manufacturer

Intelligent over current controller protection characteristic

Figure 1 Basic function (long delay short delay and instantaneous protection)

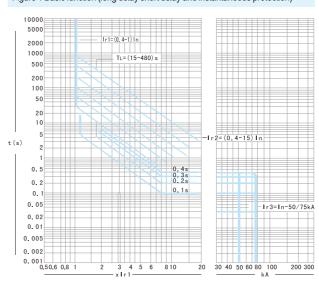


Figure 2 Earth fault protection

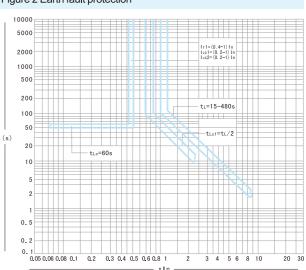


Figure 3 Load monitor and control (1 load limit and 1 load coincidence protection characteristic)

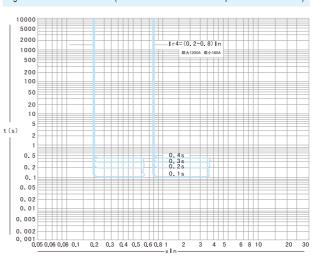
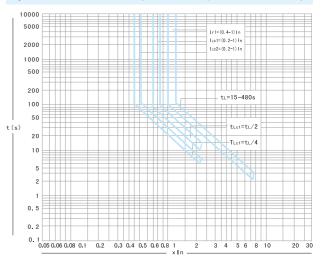


Figure 4 Load monitor and control (double load limit protection characteristic)



Form 4 Release current setting value Ir and tolerance

Long delay	Long delay Short delay		Instantaneous		Earth fault		
lr1	Tolerance	lr2	Tolerance	Ir3	Tolerance	lr4	Tolerance
(0.4~1) i n	±10%	(0.4~15) l n	±10%	10In~50kA	±15%	(0.2~0.8)In (max 1200A)	±10%

Note: when having 3-section protection at the same time, the setting value cannot be crossed, and Ir1<Ir2<Ir3.

Form 5 Long delay over current protection inverse time action characteristic

Current	Action time	Action time						
1.05 i r1	>2h do not action	>2h do not action						
1.3lr1	<1h action	1h action						
1.5lr1	15s	5s 30s 60s 120s 240s 480s						
2.0lr1	8.4s	3.4s 16.9s 33.7s 67.5s 135s 270s						
Note: The time of	Note: The time of 2.0Ir1 is calculated as I2T=(1.5Ir1)2tL, tL is the action time when 1.5Ir1, which is set by user.							

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Form 6 Short delay current protection action characteristic

Current	Action characteristic	Action time(s)	ction time(s)					
l≥lr2 l≤8lr1	Inverse time	Setting time T=(8li	ting time T=(8lr1)²t2/l²					
N-0 1-01-4	55 " "	Setting time t2	0.1	0.2	0.3	0.4	±15%	
≥ r2 ≤8 r1	Definite time	Return time	0.06	0.14	0.23	0.35		

Earth fault protection characteristic is short delay definite time, see the definite time action time and return time in the short delay current protection characteristic, earth fault factory default setting value is "OFF".

Form 7 If user does not have special requirement when ordering, manufacture will set the intelligent controller according to the below form.

l ann dalas	Setting value	Ir1	In
Long delay	Delay	t1(1.5lr1)	15s
Short dolay	Setting value	lr2	8ln
Short delay	Short delay Delay	t2	0.4s
Instantaneous	Setting value	Ir3	12In
Earth fault	Setting value	lr4	0.4ln
Lattitiaujt	Delay	t4	OFF (Only indicate, do not break)
Note: In this form, Ir1 is	s long delay protection s	etting current, Ir2 is shor	t delay protection setting current, Ir3 is instantaneous protection setting current, Ir4 is earth protection setting current.

Form 8 Circuit breaker operating performance

1 offito Gircuit breaker operating performance					
Number of operation cycles per hour	Shell current	Number of cycles of electrified operation	Shell current	Number of cycles of not electrified operation	Total
	2000A	500次	2000A	9500次	10000次
20 time	3200A		3200A	4500次	5000次
	4000A		4000A	4000次	4500次
	6300A		6300A	2500次	3000次

Form 9 Working voltage of shunt release, under voltage release, electric operating mechanism, Energy release(closing) electromagnet, intelligent controller

		0, (0,	0 , 0
Category	Rated voltage	AC 50Hz(V)	DC (V)
Shunt release	Us	220、380	110、220
Under voltage release	Ue	220、380	_
Electric operating mechanism	Us	220、380	110、220
Energy release(closing) electromagnet	Us	220、380	110、220
Intelligent controller	Us	220、380	110、220
Note: The reliable action voltage range of shunt release is $70\% - 110\% / 1 lo. Th$	o reliable action valtage range of anergy re	logge (aloging) electromagnet and electric	operating mechanism is 950/ - 1100/ I le

Note: The reliable action voltage range of shunt release is 70%~110%Us. The reliable action voltage range of energy release(closing) electromagnet and electric operating mechanism is 85%~110% Us.

Form 10 Circuit breaker under voltage release performance

1 offit to offour broaker ando	r voltago rolodoo poriori	Tidi 100		
Category		Under voltage delay release	Zero voltage delay release	Under voltage instantaneous release
Release action time		Delay 0,1,2,3,5,10,15,20s	Delay 0,1,2,3,5s	Instantaneous
	35%-70%Ue		Can make circuit breaker brea	k
Release action voltage	≤ 35%Ue	Circuit breaker cannot close		
	≥ 85%Ue		Circuit breaker close reliably	

If power supply voltage recovers to 85%Ue within 1/2 of delay time, Circuit breaker does not break

Form 11 Auxilian contact performance

FORM IT AUXI	lary contac	ci periorma	ance						
Heado catodoni	Connect	ing		Breaking	3		On-off operation	cycle number and operatio	n frequency
Usage category	I/le	U/Ue	cos ⊕ or T0.95	I/le	U/Ue	cos	Operation cycle number	Operation cycle number per minute	Power on time(s)
AC-15	10	1.1	0.3	10	1.1	0.3	40	6(May be as same as the operation	0.05
DC-13	1.1	1.1	6Pe	1.1	1.1	6Pe	10	frequency of the main circuit)	0.03

The conventional thermal current of auxiliary contact is 6A.

The auxiliary contact is in the form: 4 sets of transfer contacts (standard)

See Form 11 for the connecting and breaking capacity of auxiliary contact under the abnormal operating conditions determined by use.

Note: When Pe≥50W, the ceiling of T0.95 =6Pe≤300ms.

Form 12 The connecting and breaking capacity of auxiliary contact under normal condition

Connecting				Breaking		
Usage category	I/Ie	U/Ue	cos Ф or T0.95	I/le	U/Ue	cos Ф or T0.95
AC-15	10	1	0.3	1	1	0.3
DC-13	1	1	6Pe	1	1	6Pe

Breaking position key lock

The circuit breakers have the accessories of "breaking position key lock" (provided as required by buyer). It can lock the circuit breaker to breaking position, when neither the close button nor release energy (closing) electromagnetic can close the circuit breaker.

Introduction of Intelligent Controller

Use	Туре	Remarks	Functional distinction		
			M SERIES		H SERIES
	Н	M and H are LCD	RMS Protection	Ammeter, Power Meter	Communication Interface: Provide
General industrial use	M	display and button setting.	Three-stage protection+ Grounding leakage protection Load Current Light Column Indicator Various alarm functions The test functions Fault Memory Function Self diagnosis	More protection functions, five features are optional Load Monitoring ▲ Contact wear and mechanical life indication Episodic memory Programming interface Function of MCR on-off and off-limit trip▲ Voltmeter▲	multi-protocol data transmission function of standard RS485 interface (Internal integration of ModBus communication protocol). Output function of alarm signal

Function Detailed Table of Intelligent Controller

Function of M-type Overcurrent Controller

- a.Amperometer function: display the operating current of each phase and the leakage current of grounding. Normally display the maximum phase current. It can also display the current value or time value of setting, testing and fault.
- b.Voltmeter function: display the voltage of each line, normal display maximum. ▲
- c.Load monitoring function: setting two setting values, ILc1 setting range (0.2-1) In, ILc2 setting range (0.2-1) In, ILc1 delay characteristic is inverse time characteristic, its time setting value is 1/2 of delay setting value;LLC2 delay characteristic has two kinds, the first is the inverse time limit characteristic, The time tuning value is 1/4 of the long delay setting value, and the second is the fixed time limit, and its delay time is 60s. These two delay functions, the former used when the current is close to the overload set value time break subordinate non-important load, the latter is used when the current exceeds the ILC1 set value, so that the delay break down the subordinate less important load, the current drops, so that the main circuit and important load circuit protection power supply, when the current drops to ILc2. After a certain delay issued a directive to reconnect the lower part of the circuit, restore the entire system of power supply.

The user can choose one of the above two kinds of monitoring protection. The monitoring characteristics are shown in Fig. 3 and Fig. 4.▲

- d.Setting function: The controller parameters can be adjusted by setting + storing four buttons.
- e.Test function: With setting + storage release reset and other keys, all kinds of protection characteristics of the controller can be checked
- f.Remote monitoring and diagnostic function

(1) The controller has the function of local fault diagnosis. When the computer fails, it can send out an error "E" display or alarm, and restart the computer at the same time. The circuit breaker can also be broken when required by the user

(2) When the local ambient temperature reaches 85 C, it can give an alarm and break the circuit breaker at a lower current. (3) Intelligent controller has signals such as overload, grounding, short circuit, load monitoring, forecasting alarm, trip indication (OCR) output through contacts or optocoupler, which is convenient for remote control. Contact capacity DC28V, 3A, AC125V, 3A.

 g.MCR tripping and analog tripping protection can be turned off according to user's requirement. It is generally necessary to turn off when doing short delay interruption test.

(1)MCR switch-on and interrupt protection is mainly used when the circuit is closed in the fault state (the controller is on the instant), and the controller has the function of breaking circuit breaker with low short circuit current. The factory is set at 10 kA with an error of <20%. Current can be set according to user's requirements

(2) The controller is equipped with the function of releasing the signal directly without the processing of the host chip when the short circuit current is very large.

h.Thermal memory function

After the controller is over-loaded or short-circuit delayed, it has the memory function of simulating bimetal characteristics before the controller is powered off. The overload energy releases in 30 minutes and the short delay energy releases in 15 minutes. During this period, overload occurs, short delay fault, trip time will be shorter, controller power off, energy automatically cleared.

Function of H-type Overcurrent Controller

addition to all the functions of M-type, it also has serial communication interface, which is matched with printer, language system or PC through special equipment.

It can transmit many parameters, such as the number of circuit breaker, switching-on state, setting value of tripper, operation current, voltage, fault current, operation time and fault state.

Display or print in graphics, text, etc.

It realizes the functions of telemetry, remote adjustment, remote control and remote communication.

Suitable for network system.

(1) Communication interface Hardware support: CPU 16bit MCU, clock frequency 25MHz, communication baud rate up to 1MHz, port compliance with EIA RS485 protocol, support duplex, half-duplex mode, cable using double-core 8 pairs, in serious interference occasions using shielding line.

(2)Data transmission mode support: support serial synchronization and serial asynchronization;

Support 8-bit and 9-bit data transmission mode and parity

Parallel communication can be achieved when necessary.

(3) The communication interface protocol is divided into three layers: application layer, link layer and physical layer, and each layer is dedicated to protocol.

(4) The function of communication interface: mainly realizes the four remote functions required by low-voltage distribution system, namely remote control, remote adjustment, remote measurement and remote communication.

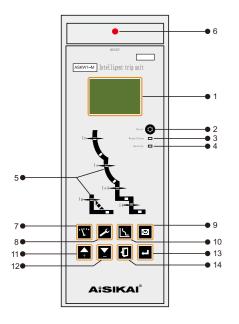
Note: A marked as optional

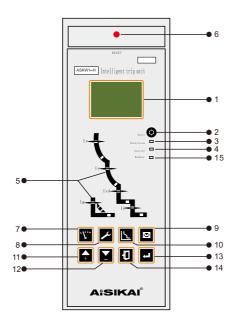
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INTELLIGENT UNIVERSAL CIRCUIT BREAKER ASKW1 SERIES

Controller panel structure





M-type controller

H-type controller

1.LCD interface display.

2.Fault and alarm reset key

3.Fault/Alarm" LED. When working normally, the LED does not light up; when the fault trips, the red LED will flash quickly; when the alarm occurs, the red LED will always light up.

4."Normal" LED always flickers as long as the controller is on and working properly.

5.Curve LED.

A red LED indicator is hidden in the curve, and the corresponding LED flashing indicates the fault type when the fault occurs. When setting the protection parameters, the LED constant brightness indicates the currently set items.

6.Reset button.

This button pops up when the fault trips or the test trips, and the circuit breaker cannot close when it is not pressed.

When the button is pressed, the fault indication is reset at the same time.

- 7. Measure Function Key 1, switch to Measure Default Theme Menu.
- 8. Setting Function Key 2, switch to the theme menu of parameter setting.
- 9. Protection Function Key 3, switch to the theme menu of protection parameter setting.
- 10. Information Function Key 4, Switch to History and Maintenance Subject Menu
- 11.Up Move the menu content up at the current level or change the selected parameters up.
- 12. Downward Move the menu content downward at the current level or change the selected parameters downward.
- 13. Exit Exit the current level of use, enter the menu of the next level, or cancel the selection of the current parameters.
- 14.Selection Enter the next menu to which the current project points; or select the current parameters; store the changes made.
- 15. Communication Indicator Modbus: No communication when extinguished, communication when flashing

Controller menu setting method

The controller provides menus including measurement menu, system parameter setting menu, protection parameter menu, history record and maintenance menu, and a default interface.

, , , , ,	
M-type controller	H-type controller
Default interface	Default interface
The controller displays default interface when powered on; Under each subject menu, press. "Exit" or the corresponding subject button, can return to default interface; If no button is pressed in 5 minutes, then the quadrate cursor will indicate the maximum phase automatically; In other interface except from pop-up fault interface, if no button is pressed in 30 minutes and then will return to default interface automatically.	When there is no other action, the column diagram for present currents of all phases will be displayed.
Measure" menu	"Measure" menu
ASKWI-M ↑ Current I Voltage U Frequency F Power P Harmonic H Press to enter Press or greaturn to default interface;	Current Iterate Iterate Iterate Iterate Iterate Iterate Iterate Press To enter Press To enter Press Pre
In other interface except from fault interface, press to jump to measure menu.	 In other interface except from fault interface, press to jump to system parameter set menu. If no button is pressed in 5 minutes and then will return to default interface automatically.
System parameter setting"menu	"System parameter setting"menu
ASKW1-M ↓ Clock setting Meter setting Test & lock ASKW1-M ↑ Committinisating — 1/O sectting	Cock acting More setting Test & lock Commission et up 10 ostilling
● Press ② to enter ● Press ② or ① return to default interface; ● In other interface except from fault interface, press ② to jump to system parameter set menu.	 Press to enter Press for term to default interface; In other interface except from fault interface, press for jump to system parameter set menu. If no button is pressed in 5 minutes and then will return to default interface automatically.
Protection parameter setting" menu	"Protection parameter setting" menu
ASKW1-M	Press to enter Press or return to default interface; In other interface except from fault interface, press to jump to system parameter set menu. If no button is pressed in 5 minutes and then will return to default interface automatically.
distory and maintenance "menu	"History and maintenance "menu
ASKW1-M ASKW1-M ASKW1-M ASKW1-M Displacement records ASKW1-M Displacement records ASKW1-M ASKW1-M	Contract alones Contract contract Contract contract
● Press I to enter ● Press I to enter ● Press I or I return to default interface. ● In other interface except from fault interface, press I to jump to protection parameter set menu.	 Press ☐ to enter Press ☐ or ☐ return to default interface; In other interface except from fault interface, press ☐ to jump to system parameter set menu. If no button is pressed in 5 minutes and then will return to default interface automatically.
Sub-menu operation example: overload long time delay protection set	Sub-menu operation example: overload long time delay protection set
$ \begin{bmatrix} \text{Ir} & \downarrow \\ -1000 \text{A} - 40.0\% \text{In} & \downarrow \\ -\text{Curve type} & \\ -\text{VI} & \end{bmatrix} $	Ling time data Ling time data Ling time data
 Press ☐ or ☐ to select item to be set, then press ☐ ; Press ☐ or ☐ to adjust value; Press ☐ to save adjusted value. 	 ● Press or to select item to be set, then press ; ● Press to save adjusted value.
	· · · · · · · · · · · · · · · · · · ·





PRODUCT ACCESSORIES-STANDARD



Shunt (Opening) release



Energy release (Closing) electromagnetic



Electric operating mechanism



Auxiliary contact



Close coil protection circuit board



Doorframe and pad

Shunt (Opening) release

Shunt release can disconnect the circuit breaker instantaneously after release is powered on. This operation can be made remotely.

Action characteristic		
Rated control power voltage Ue(V)	AC230 AC400	DC110 DC220
Action voltage	(0.7~1.1)Us	
Power consumption	56VA	250W
Breaking time	50+10(ms)	

Energy release (Closing) electromagnetic

After the motor finishes energy storing, when the closing electromagnetic is powered on, the energy-storing spring force in the operating mechanism is released instantly, making the circuit breaker close quickly.

Action characteristic		
Rated control power voltage Ue(V)	AC230 AC400	DC110 DC220
Action voltage	(0.85~1.1)Us	
Power consumption	56VA	250W
Closing time	50 ± 10(ms)	

Electric operating mechanism

Having motor energy storing function and automatic energy re-storing function after circuit breaker closing, ensuring the circuit breaker can close shortly after opening. Manual energy pre-storing is also viable.

Action characteristic		
Rated control power voltage Ue(V)	AC230 AC400	DC110 DC220
Action voltage	(0.85~1.1)Us	
Power consumption	250VA/350VA	200W
Energy storing time	<4s	
Operating frequency	At most 3 times per minute	

Auxiliary contact

The auxiliary contact standard form is 4 sets of transfer contacts (4 normally close), 8 separate contacts(4 normally close 4 normally open or as specified) is optional.

Technical parameter

Rated voltage (V)		Rated thermal current th(A)	Rated control capacity
AC	230	10	300VA
AO	400	6	100VA
DC	220	0.5	60W

Close coil protection circuit board

Protection method: after the fist time close failure, disconnect the close coil power supply, then close again; After 3 times close failure, disconnect the close coil power supply, preventing the coil from burning out as a result of always powered on.

Doorframe and pad

Mount on the door of power distribution cabinet room for sealing, protection level achieves IP40(protection level is IP20 when circuit breaker is installed separately).

Cable fasten screws

The fasten screws used for connecting circuit breaker and primary circuit cable are equipped in the product package.

PRODUCT ACCESSORIES-STANDARD



Under voltage release







Phase partition





Steel cable mechanical interlocking

Under voltage release

When under voltage is not powered, neither electric nor manual can make circuit breaker close, Under voltage release is divided into 3 types: instantaneous action, under voltage delay and zero voltage

Zero voltage delay release can be set among 0, 1, 2, 3, 5 seconds, without adjustment function. Under voltage delay release can be set among 0, 1, 2, 3, 5, 10, 20 seconds, without adjustment function.

Action characteristic	
Rated control power voltage Ue(V)	AC230 AC400
Action voltage	(0.35~0.7)Ue
Reliable closing voltage	(0.85~1.1)Ue
Reliable non-closing voltage	≤0.35Ue
Power consumption	20VA

External N neutral line transformer

When using ASKW1 3 poles circuit breaker in TN-S power distribution, connect with neutral line N current transformer for earth fault protection. The maximum distance from the transformer installation location to the circuit breaker is 2m.

Earth fault protection signal adopts the vector sum of three phases current and N phase current. The protection characteristic is definite time protection.

Relay module

When using H type controller with ASKW1 circuit breaker, the optional dedicated relay module can expand the 3A relay to 5A, making it convenient for user to connect with various load equipment.

Power module

Dedicated power for the relay module, transforming the external AC220V control power to DC24V.

Phase partition

Mounted between the phases of wiring busbars, enhancing the insulation capacity of the circuit breaker phases.

Can fix the circuit breaker "Open" button at the pressed down position, after user turn the key, then the circuit breaker can not close.

One circuit breaker with a separate lock and one or two keys.

Three units circuit breakers are equipped with three same locks and two same keys.

Note: when removing the key form the circuit breaker, user must first press down "Open" button and turn the key anticlockwise, then remove the key.

ACB - 15





Mechanical interlocking device

Mechanical interlocking of steel cable

Interlocking of two triode or quadrupole circuit breakers installed horizontally or vertically

- a.When the cable rope bends, there should be sufficient transition arc at the bend (generally greater than 120mm) to ensure flexible movement of the cable rope.
- b. Check the cables and make sure there is enough lubricant in the cables to ensure the flexible movement of the cables.
- c. The maximum distance between two interlocking circuit breakers is 2 m

Anti-misinsertion device for drawer seat

Only the circuit breaker body, which matches the rated current shown in the sign, can be inserted into the corresponding drawer seat. The body cannot be inserted when the rated current does not match.

Connecting Rod interlock

Interlocking mechanism installed on the right plate of the circuit breaker, stacked circuit breaker with connecting rod interlock (Fig. 8), flat circuit breaker with steel cable interlock (Fig. 9), when one of the circuit breakers is in the closing state, then the other can not close, the interlocking mechanism is installed by the user.

Fig. 8 is a 3 stacked circuit breakers with connecting Rod interlock.

Such as 2 circuit breaker interlock only need to remove the top circuit breaker.

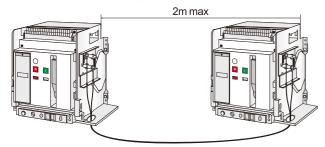
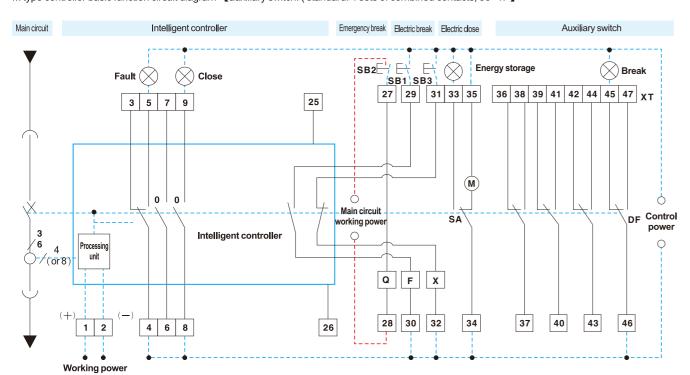


Figure 9. Horizontal circuit breaker interlock

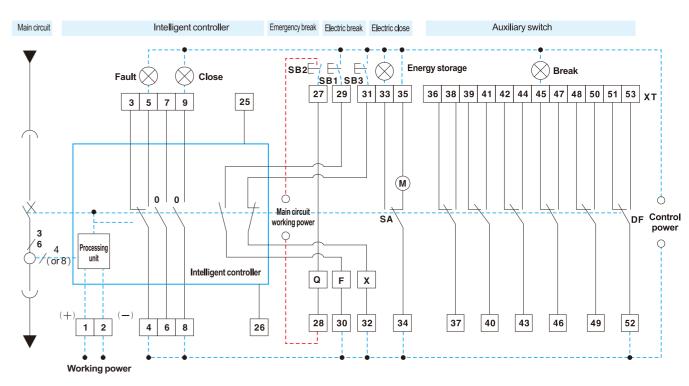
Figure 8. Stack circuit breaker interlock

SECONDARY CIRCUIT WIRING DIAGRAM

M type controller basic function circuit diagram 【auxiliary switch: (standard: 4 sets of combined contacts, 36~47 】



M type controller basic function circuit diagram [auxiliary switch: (6 sets of combined contacts, 36~53]



Wiring of Intelligent Controller

1#,2#: Auxiliary power input, when the auxiliary power supply is DC, 1 # is the positive end;

3#,4#,5#: Fault tripping contact output. Contact capacity AC380V, 3A.

6#,7#,8#,9#: Two sets of circuit breaker State auxiliary contacts, contact capacity of AC380V, 3 A. If the user proposes, 6#, 7# can output often closed contacts.

25#, 26#: Outside neutral pole or grounding current transformer input

21#: N input terminal; 22#, 23#, 24#: A, B, C three-phase power supply input terminal (with voltmeter function to access).

SB1: Excitation Button (User-provided)

X: Closing Electromagnet

Q: Undervoltage release or undervoltage delay release.

SB2: Undervoltage Button (User-provided)

M: Energy Storage Motor

Df: Auxiliary contacts.

SB3: Switch-on button (user-provided)

F: Excitation tripper

XT: Terminal.

0: Frequently open contacts

SA: Motor Micro Switch

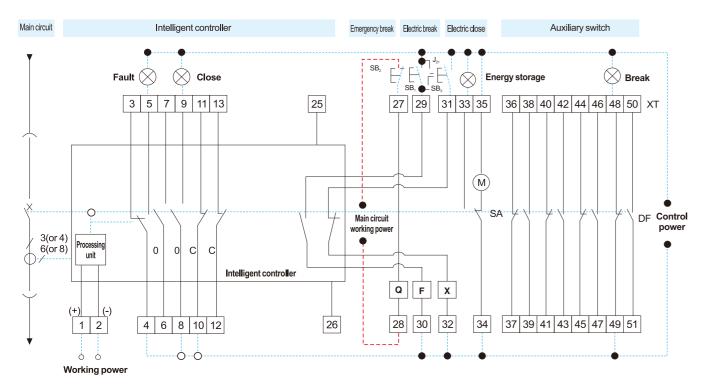
⊗:Signal lamp (user-provided)

Note: (1) If the control power supply voltage of Q, F, X and M is different, different power supply is connected separately.

- (2) Terminal 35# can be connected to direct power supply (automatic pre-energy storage), can also be concatenated often open button after the power supply (hand-controlled pre-storage energy).
 - (3) The circuit breaker is in the state of switching off and no energy storage, and the main body is in the connecting position.



M type controller basic function circuit diagram (auxiliary switch: 4 open 4 close, 8 separate contacts, 36~51)



Wiring of Intelligent Controller

1#,2#: Auxiliary power input, when the auxiliary power supply is DC, 1 # is the positive end;

3#,4#,5#: Fault tripping contact output. Contact capacity AC380V, 3A.

6#,7#,8#,9#: Two sets of circuit breaker State auxiliary contacts, contact capacity of AC380V, 3 A. If the user proposes, 6#, 7# can output often closed contacts.

25#, 26#: Outside neutral pole or grounding current transformer input

21#: N input terminal; 22#, 23#, 24#: A, B, C three-phase power supply input terminal (with voltmeter function to access).

SB1: Excitation Button (User-provided)

X: Closing Electromagnet

Q: Undervoltage release or undervoltage delay release.

SB2: Undervoltage Button (User-provided)

M: Energy Storage Motor

Df: Auxiliary contacts.

SB3: Switch-on button (user-provided)

F: Excitation tripper

XT: Terminal.

0: Frequently open contacts

SA: Motor Micro Switch

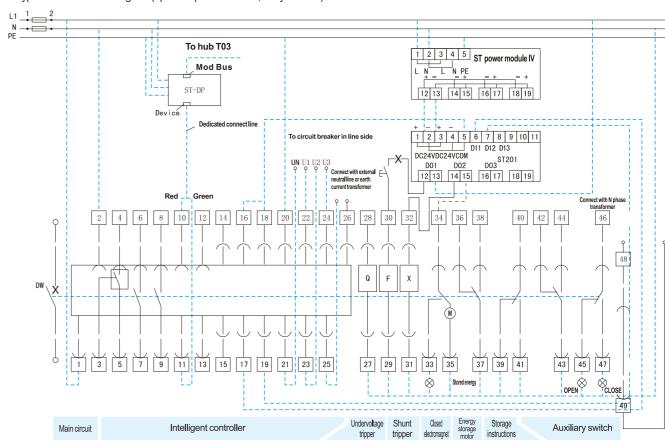
⊗:Signal lamp (user-provided)

Note: (1) If the control power supply voltage of Q, F, X and M is different, different power supply is connected separately.

(2) Terminal 35# can be connected to direct power supply (automatic pre-energy storage), can also be concatenated often open button after the power supply (hand-controlled pre-storage energy).

(3) The circuit breaker is in the state of switching off and no energy storage, and the main body is in the connecting position.

H type controller circuit diagram (optional: power module, relay module)



1#, 2#: Power input.

10 #: RS485 communication P terminal (single 2).

11 #: RS485 communication N terminal (single 2).

12#, 13#: Load 1 alarm.

14#, 15#: Load 2 alarm.

16#, 17#: Switching signal output.

18#, 19#: Closing signal output.

20#: PE line.

21 #: N input.

22#, 23#, 24#: A, B, C three-phase power supply input.

ST-DP: DP protocol module.

ST power module IV: power module (optional, not necessarily optional).

ST201: Relay module (optional, not required)

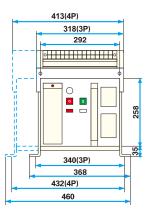
Note: (1) The dotted line is connected by users themselves.

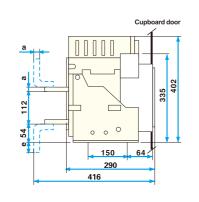
(2) The wiring with auxiliary function release refers to the figure above.

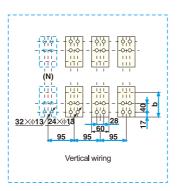


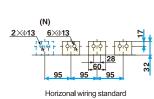
Outline and mounting dimensions

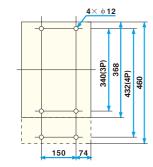
Fixed circuit breaker(2000A frame: 3P/4P)

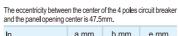






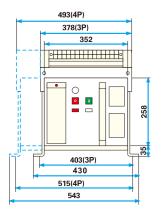


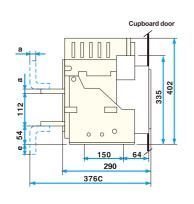


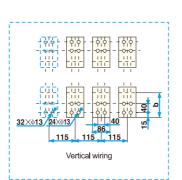


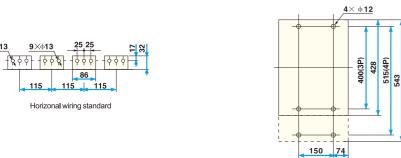
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1000-1600A	15	105	48
2000A	20	115	58

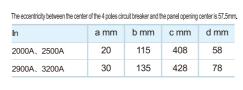
Fixed circuit breaker(3200A frame: 3P/4P)



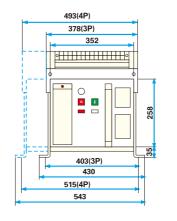


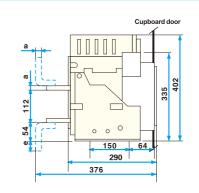


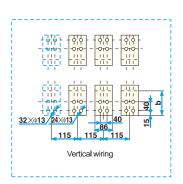


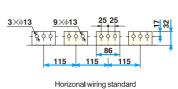


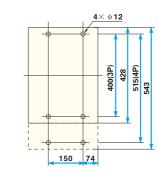
Fixed circuit breaker(Capacity-expanded type 4000A frame: 3P/4P)



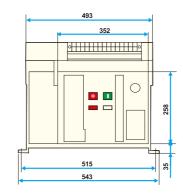


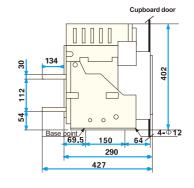


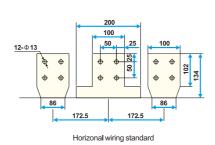


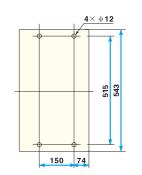


Fixed circuit breaker(Standard type 4000A frame: 3P)



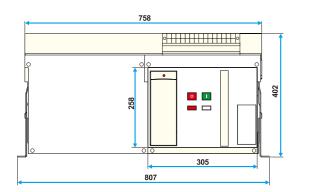




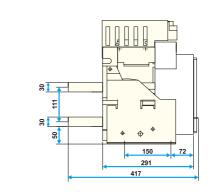


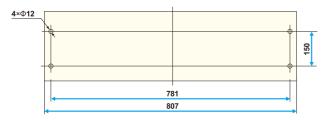


Fixed circuit breaker(Standard type 5000A frame: 3P)

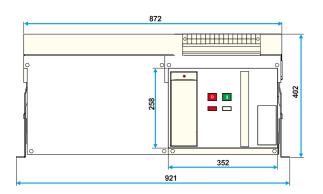


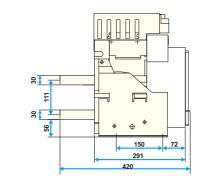


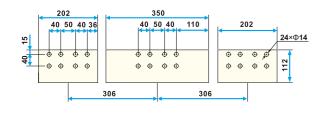


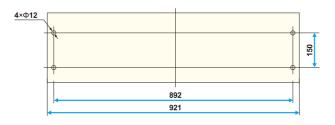


Fixed circuit breaker(6300A frame: 3P)

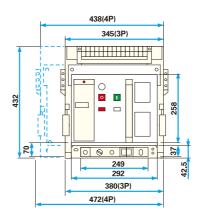


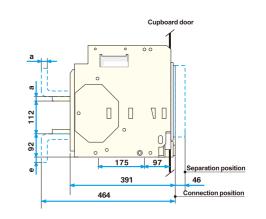


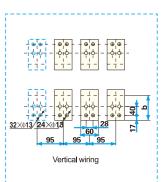


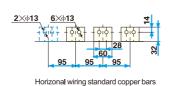


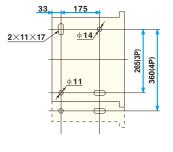
Drawer circuit breaker(2000A frame: 3P/4P)







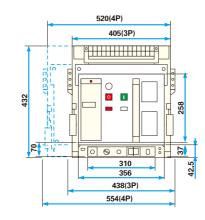


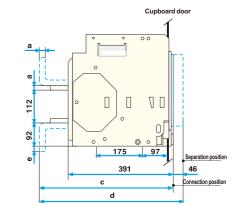


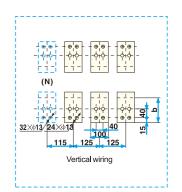
The eccentricity between the center of the 4 poles circuit breaker and the panel opening center is 47.5mm.

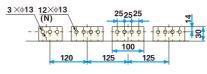
In	a mm	b mm	e mm
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1000-1600A	15	105	48
2000A	20	115	58

Drawer circuit breaker(3200A frame: 3P/4P)









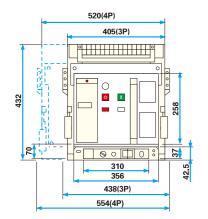
Horizonal wiring standard copper bars

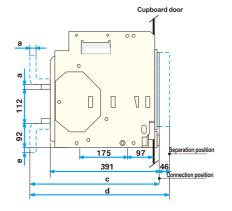
The eccentricity between the center of the 4 poles circuit breaker and the panel opening center is 47.5mm.

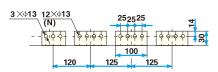
In	a mm	b mm	c mm	d mm	e mm
2000A、2500A	20	115	482	528	23
2900A、3200A	30	135	502	548	43

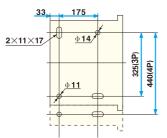


Drawer circuit breaker(Capacity-expanded type 4000A frame: 3P/4P)



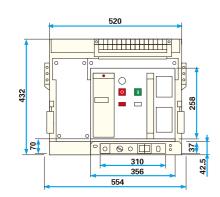


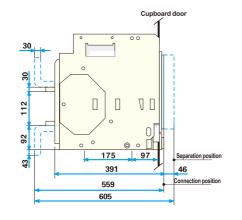


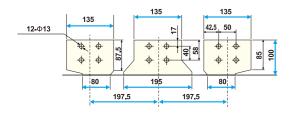


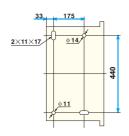
Horizonal wiring standard copper bars

Drawer circuit breaker(Standard type 4000A frame: 3P)

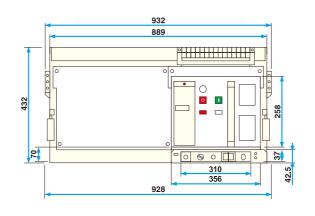


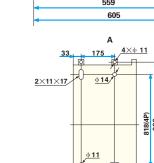






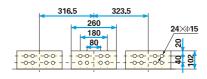
Drawer circuit breaker(6300A frame: 3P)





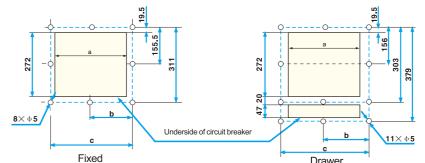
222 175 97

437



Horizonal wiring standard copper bars

Panel opening installation dimensions



Inm	a mm	b mm	c mm
2000 series	306	173	346
3200 series、4000、6300 series	366	202.5	405

Dimensions and quantity of the external copper bars

Birrioriolorio aria quartity or trio	OMOTHUL OC	oppor baro									
Rated current	630A	800A	1000A	1250A	1600A	2000A	3200A	3600A	4000A	5000A	6000A
External copper bars dimensions	40×5	50×5	60×5	80×5	100×5	100×5	120×10	120×10	120×10	120×10	120 × 10
Quantity per pole	2	2	2	2	2	3	3	4	4	5	6





Installation, operation and maintenance

Installation

- Check whether the specifications of circuit breakers meet the requirements before installation.
- Check the insulation resistance of the circuit breaker with 500V Euclidean table before installation, and should not be less than 10MΩ when the ambient medium temperature 20±5°C and relative humidity 50%~70%, otherwise it should be dried and can be used until the insulation resistance reaches the requirements.
- When the circuit breaker is installed, the circuit breaker should be perpendicular and fastened with M10 screws. Drawer type circuit breaker should first pull out the circuit breaker, the drawer seat is fastened and then the circuit breaker into the drawer seat.
- When installing, the circuit breaker should be grounded reliably. There are obvious grounding marks at the grounding point. The fixed circuit breaker should strictly observe the safety zone.
- After the circuit breaker is installed and wired according to the relevant wiring diagram, the following operation tests shall be carried out before the circuit is powered on (the drawer type circuit breaker is placed in the "test" position).
- a. Check whether the rated voltage of undervoltage tripper, shunt tripper, energy-releasing electromagnet and electric energy storage mechanism is in conformity with the connected power supply, and then connect the secondary circuit. (Undervoltage trippers must be energized for circuit breakers to operate)
- b. Check whether the reset button of the intelligent controller is reset. Only when the reset button is placed in the reset position can the circuit breaker be closed
- c. After seven times the handle on the flip panel, the "Storage Energy" is displayed and the "click" is heard, that is, the storage energy ends, the "L" button or the energy-releasing electromagnet is powered on, the circuit breaker is reliably closed, and the trigger handle can be stored again.
- d. If the motor Operation energy storage, then the motor power on, the motor electrified to the panel to display "Energy storage", and accompanied by a "click", energy storage end, motor automatic power outage, Press the "L" button or the energy-releasing electromagnet to power up, the circuit breaker is reliably closed, and the motor can be energized for the next closure ready.
- e. After the circuit breaker is closed, whether it is an undervoltage stripper or a split excitation stripper, the "O" button on the panel or the Buckle test button of the smart controller should disconnect the circuit breaker

The Use of Intelligent Controller

- The controller tuning the Intelligent controller "settings" key, in turn, display ILc1-ILc2-Ir4-t4-Ir1-t1-Ir2-Ir3 tuning data, such as factory-set data can not meet the needs of users could be reset according to the following requirements.
- Controller long delay current tuning, Press the "Clear Light" key, press the "set" key, until the long delay current status indicator light, showing the long delay factory current tuning value, according to the need can be set in the (0.4~10) In range, press "+" "-" key can increase or decrease the current, each press at ≤2% intervals until close to the required current, the finishing is complete, press the "storage" key once, the storage light is lit and extinguished, indicating that the long delay current set value has been stored end, the original integer value automatically disappears.
- Controller long delay time tuning, long delay current reset end, and then press the "set" key, long delay time status indicator light, showing long delay time factory set value (1.5LR, action time reset value), press "+" or "-" key, time can be increased or decreased, each time by one to increase or decrease a times, Until the time it takes. Complete the completion, press once "storage", storage light on and off, indicating the long delay time set end, the original setting automatically disappeared. Short delay, instantaneous, load monitoring, grounding protection Action value tuning and Action time tuning method and long delay are the same, to carry out these protection characteristics of the timing, must press the "settings" key, so that the position of its status indicator is consistent with the tuning parameters, grounding protection time set value in the "0FF" position to indicate the fault state only alarm not buckle; transient tuning in the "0FF" position (greater than 50kA is "0FF" position), indicating that the protection is canceled, the stripper in the process of tuning, once there is a fault signal is automatically blocked function, into the fault processing state. The controller has various protection parameters and must not be cross-set. The ILc2 setting value for the reclosing is less than ILc1. After all the controller parameters are set, press the "clear light" key once, or power off reset once, so that the stripper is in a running state.

Test of Controller

After setting the parameters of the controller, the protection functions of the controller can be checked before the circuit breaker is put into operation.

- a. Rock the circuit breaker to the "test" position.
- b. Use the "Settings" key to view the settings of various functions in turn.
- c. Use "set", "+" and "." to set up a simulated test current. Be careful not to store and lock it.
 d. Press the "buckle" or "no buckle" key, when pressing the "buckle" key, the test light is on, the
 corresponding status indicator flashes, after the action time, the circuit breaker is disconnected, showing
 the action time, while the fault indicator light and the stripper light is on; press the "Do not buckle" key, the
 process and press the "buckle" key, but the circuit breaker constantly open, the buckle indicator light
 e. Overload test, press "set" key to the delay state, view the overload tuning value, and then to other
 current state, press "+", "-" key, adjust the current to >1.3Ir1 current, press the "test" key can enter the
 overload test state, the controller according to the inverse time limit law delay action, and indicate the fault
 category and Test status. Other characteristic tests are similar, after the end of the test, press the "clear
 lamp" key to enter the normal operating state, at the same time must press the mechanical "reset" to close

Rules for the Use of Controllers

 If the controller does not press keys within 1 minute of setting, it will automatically clear keys and enter the normal operation state.

At the same time, once a fault occurs, the key function is automatically blocked and the fault is handled. Intelligent controller with thermal memory function must wait for the release of overload energy after the power characteristic test, before the next test can be carried out, otherwise the action time will be shortened.

a. Settings Check - After the controller "turns off the light", press the "Settings" button continuously in case of no fault, cyclically indicating various states and corresponding setting current and time. After checking, press the "clear light" button, and automatically enter the normal working state without pressing the button within 1 minute.

b. Inspection of operating current and voltage of power grid——After the controller clears the lamp, press the "Select" button continuously under the condition of no fault, cyclically indicate the operating current and grounding current of each phase, and normally display the maximum phase current.

If the controller has a voltage display module, the current display press "Select 1" and the voltage display press "Select 2", then the cycle indicates the voltage of each line, and the maximum line voltage is normally displayed.

After the controller clears the lamp, press the "fault check" button to display the last fault status and fault current. After the test or fault trip, press the "select" button, which can circularly indicate the test or fault current or time value. The experimental state is not remembered.

c. Reset- In the case of auxiliary power supply, the circuit breaker must press the controller "clear light" key before closing, so that the controller can enter the normal state, and then press the "reset" button to close

Fault handling

	Cause of fa	ilure	Processing method	
	Circuit Breakers	A.Operating Handle Internal Brake Spring	Return the spring to its original position or Connect with manufacturer	
Circuit Breakers	Can't Store Energy Manually	B.Failure of energy storage mechanism	Energy Storage Machinery Fault, Connect with manufacturer	
Can't Store	Circuit Breakers	A.The energy Storage Motor is not energized or damaged	Check whether the motor is electrified, Replace the motor if it is damaged	
Energy	Can't Store Electric	B.Electric operation control voltage is low	Check the control voltage of the operating mechanism	
	Energy	C.Failure of energy storage mechanism	Energy Storage Machinery Fault, Connect with manufacturer	
	Failure of under	A.Undervoltage tripper is not energized or working voltage is less than 85%	Check if the power is powered on, then check that the terminal is in good contact with the upper and lower plug, and adjust the operating voltage if the voltage is too low	
	voltage release	B.Failure of undervoltage release coil or delay control part	Repair or replace undervoltage release	
	can not be absorbed	C.If it is pickup assist undervoltage release, the reaction spring on the large axle of the mechanism breaks or shifts.	Repair counterforce spring sheet	
	Release	A.Energy Releasing Electromagnet Controls Power Supply Voltage < 85%	Adjust voltage	
	electromagnet	B, Energy releasing electromagnet broken	Connect with manufacturer to adjust energy-releasing electromagnet	
ACB can not	malfunction	C, Release solenoid release screw	Adjust the screw length, so that its length can be exonerated and the plastic parts are debited.	
switch on	The buckle screw o	f the split-excitation stripper is too long to die with a buckle half-axis top.	Reduce the screw to release the top-dead release half-shaft	
Not in place		vith drawer seat	Check circuit breakers should be in test or connection positions	
	Intelligent Controlle	r Throws Plastic Parts and Presses Plastic Parts of Mechanism Throws to Death	Raise the intelligent controller or rub off part of the connection between two plastic parts with a file	
	Operating	A.Displacement of Plastic Parts under Energy Releasing Electromagnets in Mechanisms	Remove the energy-releasing electromagnet and reset the plastic parts	
	mechanism failure	B.Internal failure of mechanism	Contact Manufacturer for Repair	
	If the switch w	vith mechanical interlock is not connected in the	Adjust the position of mechanical interlock	
		e buckle half-axis is stuck or the buckle is in a	If the overload current causes the switch to trip off or causes the reset button of the intelligent controller to pop up, the reset button must be pushed in before the circuit breaker can close.	
	Cannot be	A.Operating mechanism failure	Check the operating mechanism. If there is stuck, please contact the manufacturer.	
	disconnected manually	B. The adjusting screw on the release half-axle is not adjusted in place	Adjusting screw position	
	Cannot be	A. Shunt release failed to operate or power voltage <85%	Power on or adjust working voltage	
	disconnected	B.Damage of shunt release	Contact with manufacturer to change shunt release	
Breaker	electromotion	C.Operating mechanism failure	Check the operating mechanism. If there is stuck, please contact the manufacturer	
fails to close		A, Damage of controller	Contact with manufacture to change the controller	
uose	Switch short or overcurrent	B.Transformer signal line damage or poor contact with the controller, no signal input controller	Repair or change transformer	
	without tripping	C.The mechanism is stuck inside, only the release signal of the controller can not make the mechanism release.	Contact manufacturer	
Drawer circuit	Circuit breake	ers do not fully reach the "separation position"	Contact manufacturer.	
oreaker cannot	Didn't pull the	handle out when the drawer shook out.	Unplug the rocker and pull out the circuit breaker	
be pu ll ed out at separation position		ign bodies falling into the drawer seat, resulting in shaking se body teeth stuck fault, so that the circuit breaker body	Check and exclude foreign bodies, if still unable to extract, contact the manufacture	
	hook in the dra	awer seat shaft roof		
			Check and exclude foreign bodies, if still unable to extract, contact the manufacturer	
Drawer circuit breaker cannot	A foreign body falls i	awer seat shaft roof	Check and exclude foreign bodies, if still unable to extract, contact the manufacturer Check whether the thickness of bus bar of circuit breaker body is consistent with that of drawer bus bar	
Drawer circuit breaker cannot be rocked to the connecting	A foreign body falls i Circuit breaker body	awer seat shaft roof nto the drawer seat, causing the teeth of the shaking mechanism to become stuck.		
Drawer circuit oreaker cannot be rocked to he connecting	A foreign body falls i Circuit breaker body	awer seat shaft roof nto the drawer seat, causing the teeth of the shaking mechanism to become stuck. does not match the rated current of drawer (the thickness of bus bar is different) body was not fully inserted into the drawer seat and forced to shake in	Check whether the thickness of bus bar of circuit breaker body is consistent with that of drawer bus bar	
Drawer circuit preaker cannot be rocked to the connecting position	A foreign body falls in Circuit breaker body The circuit breaker body Top and bottom term	awer seat shaft roof nto the drawer seat, causing the teeth of the shaking mechanism to become stuck. does not match the rated current of drawer (the thickness of bus bar is different) body was not fully inserted into the drawer seat and forced to shake in	Check whether the thickness of bus bar of circuit breaker body is consistent with that of drawer bus bar Put the circuit breaker body in place completely before shaking it in	
Drawer circuit breaker cannot be rocked to the connecting position Controller without	A foreign body falls in Circuit breaker body The circuit breaker body Top and bottom term	awer seat shaft roof nto the drawer seat, causing the teeth of the shaking mechanism to become stuck. It does not match the rated current of drawer (the thickness of bus bar is different) body was not fully inserted into the drawer seat and forced to shake in ninal dead does not connect operating voltage	Check whether the thickness of bus bar of circuit breaker body is consistent with that of drawer bus bar Put the circuit breaker body in place completely before shaking it in Set up the upper and lower parts of the terminal	
Drawer circuit breaker cannot be rocked to the connecting position Controller without display Controller	A foreign body falls i Circuit breaker body The circuit breaker b Top and bottom term Intelligent Controller	awer seat shaft roof Into the drawer seat, causing the teeth of the shaking mechanism to become stuck. Into the drawer seat, causing the teeth of the shaking mechanism to become stuck. Indoor of the drawer seat and forced to shake in Initial dead Indoor of the drawer seat and forced to shake in Initial dead Indoor of connect operating voltage	Check whether the thickness of bus bar of circuit breaker body is consistent with that of drawer bus bar Put the circuit breaker body in place completely before shaking it in Set up the upper and lower parts of the terminal Switch on working voltage	





Specification

Customer name		Tel	Fax
Contact	Order date	Order quantity	Delivery time
Level	2000 ☐ 3200 ☐ 4000 (Increase capaci	ty) 🗌 4000 (Standard) 🔲	6300□
Pole	3P□ 4P□ 3P+N (Grounding prot	ection, External transformer)	
Rated current	630A 800A 1000A 1250A 2900A 3200A 3600A 4000A		2500A
Rated voltage	AC380/AC400V AC660/AC690V	Customer requirements:	
	M-type controller Load monitoring Voltmeter	MCR and overshoot Forecast w	arning Leakage protection
Intelligent Controller	H-type controller MCR and overshoot RS485/	232 converter Leakage protec	tion ☐ Alarm signal output ☐
	Undervoltage instantaneous release ☐ Voltage los	s(zero voltage) delay release1	S□ 2S□ 3S□ 5S□
Undervoltage release	Undervoltage delay release ☐ 1S ☐ 2S ☐ 3S	□ 5S□ 10S□ 15S□ 20S	3□
Intelligent Controller voltage	AC220V□ AC380V□ DC110V□ DC	220V Customer requirements	:
Undervoltage release voltage	AC220V□ AC380V□ DC110V□ DC	220V ☐ Customer requirements	;
Open coil voltage	AC220V□ AC380V□ DC110V□ DC	220V Customer requirements	:
Closed coil voltage	AC220V□ AC380V□ DC110V□ DC	220V ☐ Customer requirements	:
Electric energy storage voltage	AC220V□ AC380V□ DC110V□ DC	220V Customer requirements	:
Frequency	50Hz□ 60Hz□		
Auxiliary switch	Four open and four closed (combined contacts) Six open and six closed(combined contacts)	ned contacts) Four open and four closed (independen	t contact) Customer requirements:
Mechanical interlocking	Horizontal interlocking(soft interlocking) Two interlocking Three interlocking	king	g Three interlocking
Key lock	A lock and a key ☐ Two locks and one key ☐	Three locks and two keys ☐ F	ive locks and three keys
Door interlock	□ Phase pa	artition	
Outgoing model	Above input&down output Down input&above or	ıtput☐ Horizontal lengthening of o	outgoing line
Model	Power module Relay module		
Use environment	Altitude: ≤ 2000m Special altitude () m[☐ Temperature :-5°C~+40°C	Special environment ()
Packaging and transportation requirements			
Other technicial requi	uirements		
indication 2.H-type 3.The gro 4.Setting	e controller includes functions of long delay, short delay, in n, fault inquiry and memory, contact wear and mechanica controller covers all functions of M-type, and also has fun ounding protection function can be turned on directly whe g current and effective protection value are adjusted accor s any characteristic requirement, please provide additional	life and so on. ctions of load monitoring, ammeter, RS n the body is 4P. If 3P needs this function ding to factory default value without sp	6485 and so on. on, please choose 3P+N. ecial requirements.

ASKW2 Series Intelligent Universal Circuit Break

PRODUCT OVERVIEW



and power supply equipment against overload, under-voltage, short circuit, single phase earth fault. Circuit breaker has intelligent protection and isolation function. Accurate selective protection, improve the reliability of power supply, avoid unnecessary power outages. Circuit breaker has open communication interface for four remote, meeting the requirements of centralized control of automation systems. Circuit breakers of 630A and below can be used to operate motors directly, for the controlling of the motors occasional starting and stopping.

• ASKW2 series intelligent type universal circuit breaker(hereinafter referred to as "circuit breaker") is suitable for AC50Hz/60Hz, rated voltage 400V, 690V, rated current 200A-1600A of the distribution network used to distribute power and protect circuits

CLASSFICATION



- Classify by installation method
- Fixed type; drawer type
- Classify by operation method
- Electric operation; manual operation (for inspection and maintenance)
- Classify by pole numbers
- 3 poles; 4 poles
- Classify by wiring method

Upper in and lower out; lower in and upper out; horizonal in and out

Classify by intelligent over current controller performance

H type(communication function); M type (ordinary type)

Application field







Standard

GB14048.2 IEC60947-2

Normal operating conditions

Category	Requirements
Altitude	≤2000m
Temperature	-5°C-+40°C, 24H average not more than +35°C
Class of pollution	
Installment type	III , Inm 1250A circuit breaker: IV
Air Conditions	Mounting site, relative humidity not At exceed 50% at the max temperature of +40°C, higher relative humidity is allowable under lower temperature, RH could be 90% at +20°C, special measures should be taken to occurrence of dews
Installation conditions	Installed in the absence of significant shock and shock of the place. The magnetic field near the installation site should not exceed 5 times the magnetic field in any direction
Installation	Horizontally
Contact line	Wiring reversely





技术数据与性能

Form 1 Circuit Breaker Rated Current Specification

Shell frame grade rated current Inm(A)	Rated current In(A)			
1600	200、400、630、800、1000、1250、1600			

Form 2 Circuit Breaker Basic Parameter

	Model	Casing grade rated current	Rated voltage Ue(V)		Rated limit short-circuit breaking capacity		Rated running short-circuit breaking capacity		Rated short-time withstand current	Rated insulation voltage	Rated impulse withstand voltage Uimp
	Inm A	Α σο(•)		lcu kA	cos Ф	lcs kA	cos Φ	Icw	Ui(v)	(kv)	
	101010 1000	4000	400	5011-	55	0.25	42	0.25	42kA/1s	690	12(2000m)
ASKW2-1600	1600	690 50Hz	SUHZ	25	0.25	22	0.25	22kA/0.5s	UJU	12(2000111)	

Form 3 Circuit breaker operating performance

Inm A	Number of operation cycles per hour	Number of cycles of electrified operation	Number of cycles of not electrified operation	Total
1600	20	500	2500	3000

Form 4 Working voltage of shunt release, under voltage release, electric operating mechanism, Energy release(closing) electromagnet, intelligent controller

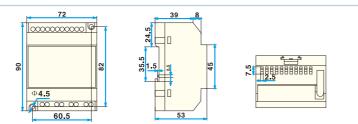
3 1 3 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	3 - 3, - 3, 3, 3, 3, 3, 3, 3,						
Category	Rated voltage	AC50Hc (V)	DC (V)				
Shunt release	Us	230, 400	110, 220				
Under voltage release	Us	230, 400	_				
Electric operating mechanism	Us	230, 400	110, 220				
Energy release(closing) electromagnet	Us	230, 400	110, 220				
Intelligent controller	Us	230. 400	110. 220				

Form 5 Auxiliary Contact Parameters

Rated voltage Us(V)	Conventional thermal current lth(A)	Rated control capacity
AC 230/400	c	300VA
DC 220/110	0	60W

Power Module

The power input of the intelligent controller for ASKW2-1600 universal circuit breaker must be DC 24V. The external power modules are divided into two types, AC and DC. AC input is AC 230V/400V, DC input is DC 220V/110V, output is DC 24V, 0.6A. Two installation methods: using the 35mm standard rail or mounting directly. See Figure 1 for outline dimensions.



Breaking position key lock

The circuit breakers have the accessories of "breaking position key lock" (provided as required by buyer). It can lock the circuit breaker to breaking position, when neither the close button nor release energy (closing) electromagnetic can close the circuit breaker.

Form 6 Release current setting value Ir and tolerance

Long delay		Short delay		Instantaneous		Earth fault	
lr1	Tolerance	lr2	Tolerance	Ir3	Tolerance	lr4	Tolerance
(0.4~1) i n	± 10%	(3~10) l n	± 10%	(3~15) l n	± 15%	(0.2~0.8)In	± 10%

Note: 1.In this form, Ir1 is long delay protection setting current, Ir2 is short delay protection setting current, Ir3 is instantaneous protection setting current, Ir4 is earth protection setting current; 2.When used in 690V, the maximum instantaneous protection setting current is 10kA;

3. when having 3-section protection at the same time, the setting value cannot be crossed, and lr1<lr2<lr3.

Form 7 Long delay over current protection inverse time action characteristic [Tripping action time T(L type)]

Current	Action time(s)				Tolerance
1.05lr1	>2h do not action	on			
1.3lr1	<1h action				± 15%
1.5lr1	30	60	120	240	± 1370
2.0lr1	16.9	33.7			

Note: The time of 2.0Ir1 is calculated as $I^2 T = (1.5Ir1)^2 tL$, tL is the action time when 1.5Ir1, which is set by user.

Form 8 Short circuit short delay over current protection action characteristic(short delay protection current setting value)

Short delay protection current setting value t2(s)	0.2	0.4	允差
Maximum breaking time (s)	0.23	0.46	± 10%
No tripping duration (s)	0.14	0.33	± 10/0

L type controller is time-limited action characteristics. When over load current I exceeds the setting value tsd, the controller performs the delay protection separately according to one of the two values of 0.2s and 0.4s.

Form 9 Earth fault protection characteristic(earth fault time setting value)

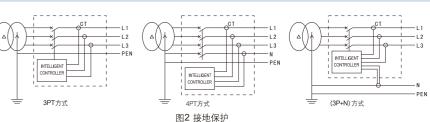
Earth fault time setting value t4(s)	OFF	0.1	0.2	0.3	0.4
Maximum breaking time (s)	_	0.11	0.23	0.32	0.46
No tripping duration (s)	_	0.06	0.14	0.24	0.33

See Figure 10 for the earth fault time setting value. The earth fault time setting value is OFF in factory setting.

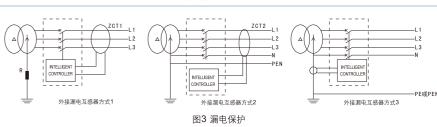
Note: for the L type release, the earth fault time setting value is 0.2s or 0.4s.

Earth leakage protection is a protection function used to protect equipment because equipment has leakage current to the ground. It is divided into two protection functions according to the size of earth leakage current and different protection requirements.

1.Internal transformer vector sum method (earth protection), controllers protect according to the vector sum of the three-phase current and the neutral pole current. It is divided into 3 methods, 3PT, 4PT and (3P+N)T according to pole numbers, see Figure 2.



2.External leakage current transformer (leakage protection) , the controller directly takes the output current signal of an external current transformer for protection. This method has high sensitivity, especially suitable for the low earth current protection from several amps to dozens of amps. There are two ways of sampling ground signals, in Figure 3, 1 and 2 are rectangular transformer sampling, 3 is circular transformer sampling.







INTELLIGENT CONTROLLER

Form 10 Intelligent controller function comparation

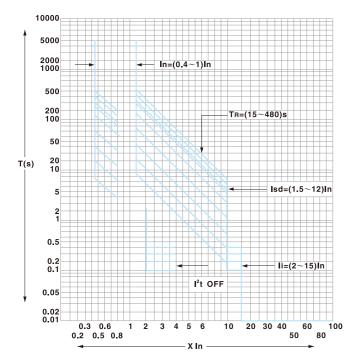
Figure 4 Over current protection characteristic

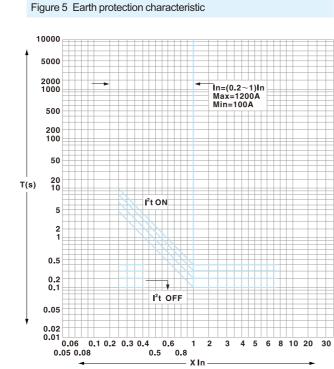
Application	Power distribution or motor pro	Power distribution or motor protection				
Model	M type		H type	Remark		
Function	Three section protection + earth protection Test function Self-diagnosis function Parameter setting function Current column indication MCR making and breaking function Fault inquiry and fault memory function Four sets of signal contact outputs (programmable) ▲ Beyond tripping function ▲ Heat memory function	Contact wear and mechanical life indication Event record Program interface Load monitor▲ Five characteristic curves▲ Fault identification function▲ Grid historical parameter record▲ Leakage protection ● Function table	Communication interface: provide standard RS485 interface, multi-protocol data transmission (internal integration ModBus-RTU protocol) Switch function of remote control, local and setting 3 positions	All are digital units; M/H type use liquid crystal display, button setting method.		

Note: The above mark ▲ is optional extra function, and the others are basic functions. For the above mark ●, see the detailed description below:

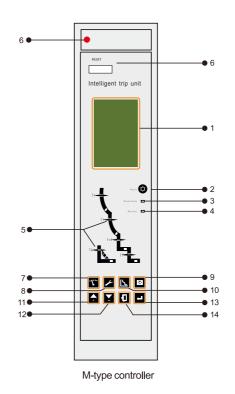
- 1. For M, H type, if choosing the optional extra function, there is no earth leakage function;
- 2. For M type, "function table" is optional extra function, but for H type, "function table" is basic function.

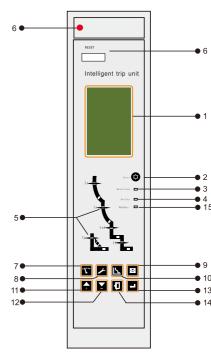
INTELLIGENT OVER CURRENT CONTROLLER PROTECTION CHARACTERISTIC





Controller panel structure





H-type controller

- 1.LCD interface display.
- 2.Fault and alarm reset key
- 3.Fault/Alarm" LED. When working normally, the LED does not light up; when the fault trips, the red LED will flash quickly; when the alarm occurs, the red LED will always light up.
- 4."Normal" LED always flickers as long as the controller is on and working properly.

5.Curve LED.

A red LED indicator is hidden in the curve, and the corresponding LED flashing indicates the fault type when the fault occurs. When setting the protection parameters, the LED constant brightness indicates the currently set items.

6.Reset button.

This button pops up when the fault trips or the test trips, and the circuit breaker cannot close when it is not pressed.

When the button is pressed, the fault indication is reset at the same time.

- 7. Measure Function Key 1, switch to Measure Default Theme Menu.
- 8. Setting Function Key 2, switch to the theme menu of parameter setting.
- 9. Protection Function Key 3, switch to the theme menu of protection parameter setting.
- 10. Information Function Key 4, Switch to History and Maintenance Subject Menu
- 11.Up Move the menu content up at the current level or change the selected parameters up.
- 12. Downward Move the menu content downward at the current level or change the selected parameters downward.
- 13. Exit Exit the current level of use, enter the menu of the next level, or cancel the selection of the current parameters.14. Selection Enter the next menu to which the current project points; or select the current parameters; store the changes made.
- 15. Communication Indicator Modbus: No communication when extinguished, communication when flashing



Controller menu setting method

M-type controller	H-type controller
The controller displays default interface when powered on; Under each subject menu, press "Exit" or the corresponding subject button, can return to default interface; If no button is pressed in 5 minutes, then the quadrate cursor will indicate the maximum phase automatically; In other interface except from pop-up fault interface, if no button is pressed in 30 minutes and then will return to default interface automatically.	When there is no other action, the column diagram for present currents of all phases will be displayed.
Measure" menu	"Measure" menu
ASKW1-M ↑ Current I Voltage U Frequency F	Correct Voltage U Inspect F Power P Bassiny E
 ◆ Press \(\bar{\mathbb{\text{T}}}\) to enter ◆ Press \(\bar{\mathbb{\text{T}}}\) or \(\bar{\mathbb{\text{I}}}\) return to default interface; ◆ In other interface except from fault interface, press \(\bar{\mathbb{\text{T}}}\) to jump to measure menu. 	 Press to enter Press to return to default interface; In other interface except from fault interface, press to jump to system parameter set menu. If no button is pressed in 5 minutes and then will return to default interface automatically.
System parameter setting"menu	"System parameter setting"menu
ASKWI-M 1 Clock setting Meter setting Test & lock Press to enter Press or 1 return to default interface; In other interface except from fault interface, press to jump to system parameter set menu.	Moder string Tot A box From A box Commissions Owner Press
Protection parameter setting" menu	"Protection parameter setting" menu
ASKW1-M ↓ Current protection Load monitoring Voltage protection Other protection Contents Voltage protection Press Sto enter Press To return to default interface. In other interface except from fault interface, press to jump to protection parameter set menu.	Press to enter Press to enter Press for fine return to default interface; In other interface except from fault interface, press to jump to system parameter set menu.
listory and maintenance "menu	"History and maintenance "menu
ASKWI-M	Commercial Department Control State Control
● Press to enter ● Press to enter • Press to enter • In other interface except from fault interface, press to jump to protection parameter set menu.	 Press ☐ to enter Press ☐ or ☐ return to default interface; In other interface except from fault interface, press ☐ to jump to system parameter set menu. If no button is pressed in 5 minutes and then will return to default interface automatically.
Sub-menu operation example: overload long time delay protection set	Sub-menu operation example: overload long time delay protection set
Ir	Long time delay
 Press or to select item to be set, then press ; Press or to adjust value; Press to save adjusted value. 	 Press ☐ or ☐ to select item to be set, then press ☐; Press ☐ or ☐ to adjust value; Press ☐ to save adjusted value.

PRODUCT ACCESSORIES-STANDARD



Shunt (Opening) release



Energy release (Closing) electromagnetic



Electric operating mechanism



Auxiliary contact



Under voltage release

Shunt (Opening) release

Shunt release can disconnect the circuit breaker instantaneously after release is powered on. This operation can be made remotely.

Action characteristic		
Rated control power voltage Ue(V)	AC230 AC400	DC110 DC220
Action voltage	(0.7~1.1)Us	
Power consumption	56VA	250W
Breaking time	50±10(ms)	

Energy release (Closing) electromagnetic

After the motor finishes energy storing, when the closing electromagnetic is powered on, the energy-storing spring force in the operating mechanism is released instantly, making the circuit breaker close quickly.

Action characteristic						
Rated control power voltage Ue(V)	AC230 AC400	DC110 DC220				
Action voltage	(0.85~1.1)Us					
Power consumption	56VA	250W				
Closing time	50 ± 10(ms)					

Electric operating mechanism

Having motor energy storing function and automatic energy re-storing function after circuit breaker closing, ensuring the circuit breaker can close shortly after opening. Manual energy pre-storing is also viable.

Action characteristic		
Rated control power voltage Ue(V)	AC230 AC400	DC110 DC220
Action voltage	(0.85~1.1)Us	
Power consumption	250VA/350VA	200W
Energy storing time	<4s	
Operating frequency	At most 3 times per minute	

Auxiliary contact

The auxiliary contact standard form is 4 sets of transfer contacts (4 normally close), 8 separate contacts(4 normally close 4 normally open or as specified) is optional.

Technical	parameter		
Rated volt	age (V)		Rated thermal cu
		230	10

Rated voltage (V)		Rated thermal current th(A)	Rated control capacity
AC	230	10	300VA
	400	6	100VA
DC	220	0.5	60W

Under voltage release

When under voltage is not powered, neither electric nor manual can make circuit breaker close.

Action characteristic	on characteristic				
Rated control power voltage Ue(V)	AC230 AC400				
Action voltage	(0.35~0.7)Ue				
Reliable closing voltage	(0.85~1.1)Ue				
Reliable non-closing voltage	≤0.35Ue				
Power consumption	20VA				

Cable fasten screws

The fasten screws used for connecting circuit breaker and primary circuit cable are equipped in the product package.







Doorframe and pad



Phase partition



Key lock



Mechanical interlocking device

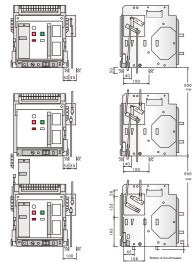


Figure 8. Stack circuit breaker interlock

Doorframe and pad

Mount on the door of power distribution cabinet room for sealing, protection level achieves IP40(protection level is IP20 when circuit breaker is installed separately).

External N neutral line transformer

When using ASKW2 3 poles circuit breaker in TN-S power distribution , connect with neutral line N current transformer for earth fault protection (connect with the No.6 and No.7 wiring terminals of controller) . The maximum distance from the transformer installation location to the circuit breaker is 2m.

Earth fault protection signal adopts the vector sum of three phases current and N phase current. The protection characteristic is definite time protection.

Phase partition

Mounted between the phases of wiring busbars, enhancing the insulation capacity of the circuit breaker phases.

Key lock

Can fix the circuit breaker "Open" button at the pressed down position, after user turn the key, then the circuit breaker can not close.

One circuit breaker with a separate lock and one or two keys.

Three units circuit breakers are equipped with three same locks and two same keys.

Note: when removing the key form the circuit breaker, user must first press down "Open" button and turn the key anticlockwise, then remove the key.

Mechanical interlocking device

Mechanical interlocking of steel cable

 $Interlocking \ of \ two \ triode \ or \ quadrupole \ circuit \ breakers \ installed \ horizontally \ or \ vertically$

a. When the cable rope bends, there should be sufficient transition arc at the bend (generally greater than 120mm) to ensure flexible movement of the cable rope.

b. Check the cables and make sure there is enough lubricant in the cables to ensure the flexible movement of the cables.

c. The maximum distance between two interlocking circuit breakers is 2 m

Anti-misinsertion device for drawer seat

Only the circuit breaker body, which matches the rated current shown in the sign, can be inserted into the corresponding drawer seat. The body cannot be inserted when the rated current does not match.

Connecting Rod interlock

Interlocking mechanism installed on the right plate of the circuit breaker, stacked circuit breaker with connecting rod interlock (Fig. 8), flat circuit breaker with steel cable interlock (Fig. 9), when one of the circuit breakers is in the closing state, then the other can not close, the interlocking mechanism is installed by the user.

Fig. 8 is a 3 stacked circuit breakers with connecting Rod interlock.

Such as 2 circuit breaker interlock only need to remove the top circuit breaker.

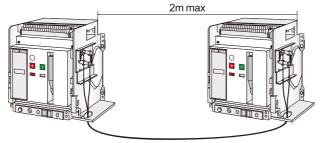


Figure 9. Horizontal circuit breaker interlock

SECONDARY CIRCUIT WIRING DIAGRAM

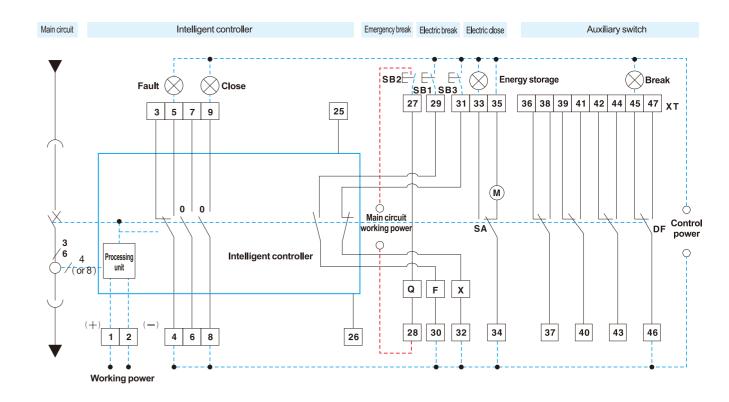
M type controller basic function circuit diagram [auxiliary switch: (standard: 4 sets of combined contacts, 36~47]

There are 47 wiring terminals on the circuit breaker main body, which is easy to wire and convenient to use.

Other wiring of intelligent controller:

#1, #2 AC working power input (input from U1, U2 of DC power module when using DC)

#25, #26 connect with external neutral pole or earth current transformer input



Note:

- (1) If the control power supply voltage of F, X and M is different, different power supply is connected separately.
- (2) Terminal 35# can be connected to direct power supply (automatic pre-energy storage), can also be concatenated often open button after the power supply (hand-controlled pre-storage energy).
- (3) If user require, No.6~7 terminal can output normally close contact
- (4) Extra accessories are supplied by user
- (5) *When using DC power as the working power of the intelligent controller, the DC power module must be equipped (#1, #2 terminal must not directly connect with AC power in this case).

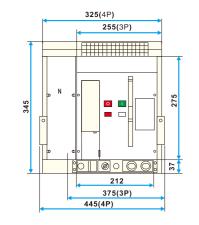
The secondary wiring is as the figure shows (DC power 110V or 220V input form U1(+), U2(-), the power module output should be connected with secondary wiring terminal 1(+) and 2(-)).

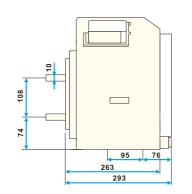
SB1: Excitation Button (User-provided)	X: Closing Electromagnet	DF: Auxiliary contacts.	Q: Undervoltage release or undervoltage delay release.
SB2: Undervoltage Button (User-provided)	M: Energy Storage Motor	F: Excitation tripper	O:Frequently open contacts (3A/AC380V)
SB3: Switch-on button (user-provided)	XT: Terminal	SA: Motor Micro Switch	Signal lamp (user-provided)

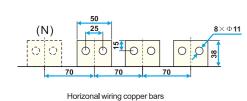


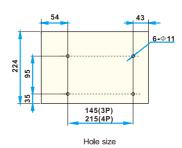
OUTLINE AND DIMENSIONS

Drawer circuit breaker(1600A frame: 200A~1000A 3P/4P)

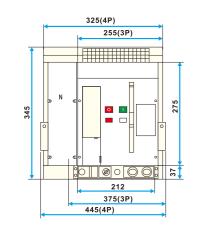


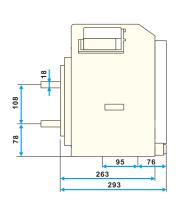


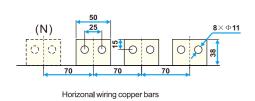


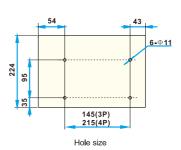


Drawer circuit breaker(1600A frame: 1250A~1600A 3P/4P)

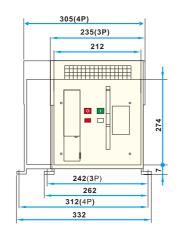


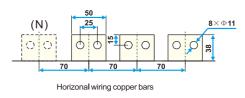


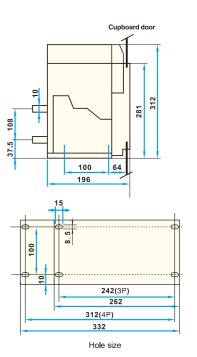




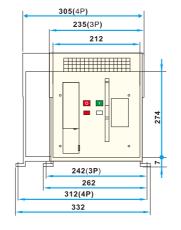
Fixed circuit breaker(1600A frame: 200A~1000A 3P/4P)

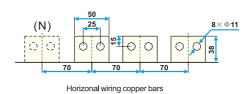


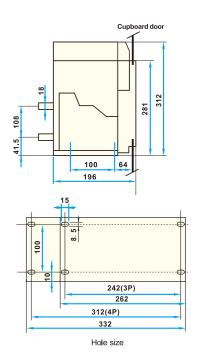




Fixed circuit breaker(1600A frame: 1250A~1600A 3P/4P)



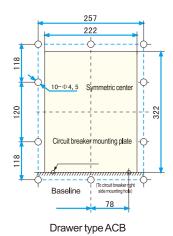


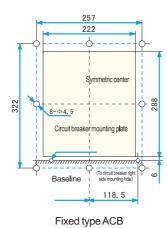




INTELLIGENT UNIVERSAL CIRCUIT BREAKER ASKW2 SERIES

ASKW2-1600/3P, 4P circuit breaker doorframe opening and installation dimensions





Dimensions and quantity of the external copper bars

Rated current A	External copper bars dimensions		Rated current A	External copper bars dimensions		
	Size (mm × mm)	Quantity per pole	Nated Current A	Size (mm × mm)	Quantity per pole	
200	15×15	1	1000	60×5	2	
400	50×5	1	1250	70×5	2	
630	40×5	2	1600	80×5	2	
800	50×5	2				

Fault handling

	Cause of fa	ailure	Processing method			
Circuit Breakers	Circuit Breakers	A.Operating Handle Internal Brake Spring	Return the spring to its original position or Connect with manufacturer			
	Can't Store Energy Manually	B.Failure of energy storage mechanism	Energy Storage Machinery Fault, Connect with manufacturer			
Can't Store	Circuit Breakers	A.The energy Storage Motor is not energized or damaged	Check whether the motor is electrified, Replace the motor if it is damaged			
Energy	Can't Store Electric	B.Electric operation control voltage is low	Check the control voltage of the operating mechanism			
	Energy	C.Failure of energy storage mechanism	Energy Storage Machinery Fault, Connect with manufacturer			
	Failure of under voltage release can not be absorbed	A.Undervoltage tripper is not energized or working voltage is less than 85%	Check if the power is powered on, then check that the terminal is in good contact with the upper and lower plug, and adjust the operating voltage if the voltage is too low			
		B.Failure of undervoltage release coil or delay control part	Repair or replace undervoltage release			
		C.If it is pickup assist undervoltage release, the reaction spring on the large axle of the mechanism breaks or shifts.	Repair counterforce spring sheet			
	Release	A.Energy Releasing Electromagnet Controls Power Supply Voltage < 85%	Adjust voltage			
	electromagnet	B,Energy releasing electromagnet broken	Connect with manufacturer to adjust energy-releasing electromagnet			
ACB can not	malfunction	C, Release solenoid release screw	Adjust the screw length, so that its length can be exonerated and the plastic parts are debited.			
switch on	The buckle screw of	of the split-excitation stripper is too long to die with a buckle half-axis top.	Reduce the screw to release the top-dead release half-shaft			
	Not in place v	with drawer seat	Check circuit breakers should be in test or connection positions			
	Intelligent Controlle	er Throws Plastic Parts and Presses Plastic Parts of Mechanism Throws to Death	Raise the intelligent controller or rub off part of the connection between two plastic parts with a f			
	Operating	A.Displacement of Plastic Parts under Energy Releasing Electromagnets in Mechanisms	Remove the energy-releasing electromagnet and reset the plastic parts			
	mechanism failure	B.Internal failure of mechanism	Contact Manufacturer for Repair			
	If the switch v	vith mechanical interlock is not connected in the	Adjust the position of mechanical interlock			
		ne buckle half-axis is stuck or the buckle is in a	If the overload current causes the switch to trip off or causes the reset button of the intelligent controller to pop up, the reset button must be pushed in before the circuit breaker can close.			
	Cannot be disconnected	A.Operating mechanism failure B.The adjusting screw on the release half-axle is not adjusted in place	Check the operating mechanism. If there is stuck, please contact the manufacturer. Adjusting screw position			
	manually		Power on or adjust working voltage			
	Cannot be disconnected	A, Shunt release failed to operate or power voltage <85%	Contact with manufacturer to change shunt release			
Drookor	electromotion	B. Damage of shunt release	Check the operating mechanism. If there is stuck, please contact the manufacturer			
Breaker fails to		C. Operating mechanism failure				
close	Switch short or	A, Damage of controller B. Transformer signal line damage or poor contact with	Contact with manufacture to change the controller Repair or change transformer			
	overcurrent without tripping	the controller, no signal input controller	Trepail of change transformer			
	without tripping	C.The mechanism is stuck inside, only the release signal of the controller can not make the mechanism release.	Contact manufacturer			
Drawer circuit	Circuit breake	ers do not fully reach the "separation position"	Contact manufacturer.			
breaker cannot	Didn't pull the	handle out when the drawer shook out.	Unplug the rocker and pull out the circuit breaker			
be pulled out at separation position	in and out of th	eign bodies falling into the drawer seat, resulting in shaking ne body teeth stuck fault, so that the circuit breaker body wer seat shaft roof	Check and exclude foreign bodies, if still unable to extract, contact the manufacture			
Drawer circuit	A foreign body falls	into the drawer seat, causing the teeth of the shaking mechanism to become stuck.	Check and exclude foreign bodies, if still unable to extract, contact the manufacturer			
Drawer circuit breaker cannot be rocked to the connecting position	Circuit breaker body	y does not match the rated current of drawer (the thickness of bus bar is different)	Check whether the thickness of bus bar of circuit breaker body is consistent with that of drawer bus be			
	The circuit breaker	body was not fully inserted into the drawer seat and forced to shake in	Put the circuit breaker body in place completely before shaking it in			
	Top and bottom terr	ninal dead	Set up the upper and lower parts of the terminal			
Controller	Intelligent Controlle	r does not connect operating voltage	Switch on working voltage			
without display	Controller internal fa	ailure	Contact manufacturer.			
Contro ll er	Controller internal fa	ailure	Contact manufacturer.			
ndicator Flash	Estamalatura de	ctromagnetic interference source	Eliminating External Strong Electromagnetic Interference			

ACB - 41 ACB - 42



Specification

Useru	unit		Order quantity			C	order date			
Produ	iction model	ASKW2-1600	Installation	Poles	□ 3P □ 4P	Rated current Rated voltage In= AC 400V AC		AC 6900V		
-			Н Туре							
	Selection		М Туре							
	Function	1.Three-stage protection+grounding protection 2.Test function 3.Self-diagnostic function 4.Parameter setting function 5.Current light column indication 6.MCR turn-on and interrupt function 7.Fault query and fault memory function 8.Contact wear and mechanical life indication 9.Event records 10.Programming interface				11.Communication interface: Provide standard RS485 interface, multi-protocol data transmission function (internal integration Modbus-RTU protocol) 12. Remote control, local and set up three location switching function				
	Optional Features	☐ Four sets of signal contact output (programmable) ☐ Beyond Tripping Function ☐ Thermal memory function				Load monitoring function: ☐ mode one ☐ mode two ☐ 5 characteristic curves ☐ Fault recognition function ☐ Power grid historical parameter recording function ☐ Leakage protection				
			☐ ST Handheld Programmer ☐ ST201 relay module							
	Additional accessories	ST-DP co	2 communication module ommunication module ommunication module munication connector munication connector	e	☐ 3 ☐ C Exter	048A shiel Communica rnal Leakaç Rectangula	olded twisted paided twisted paintion line T2150 ge Current Trant Transformer Z Ormer ZT100	r meter 1/T23001 sformer:		
	Power module	☐ AC 220	V AC 38	80V		OC 110V		DC 220V		
ies	Shunt (switching) release	☐ AC 220	V AC 38	80V		OC 110V		DC 220V		
essol	Energy releasing(closing) electromagnet	☐ AC 220	V AC 38	80V		OC 110V		DC 220V		
acc	Electric operating mechanism	☐ AC 220	OV ☐ AC 38	80V		OC 110V		DC 220V		
Required accessories	Auxiliary contacts	Standard type 4 groups of combined contacts (4 normally closed)								
Red	□ Doorframe	Special type 🗆 8 independent contacts (4 normally open and 4 normally closed) 🗆 8 independent contacts (2 normally open and 6 normally closed)								
ies	☐ Undervoltage release	☐ Underv	oltage instantaneous rele	ease						
ssor		☐ Underv	oltage delay release	□0.3s	☐ 0 . 5s	☐ 1s	☐ 3s	☐ 5s		
Select accessories	☐ Mechanical chain	☐ Horizon	tal linkage Vertical	al linkage	□ Doo	or interlock				
e sct	☐ Disconnect lock key lock									
Sele	☐ Intersecting clapboard									
Conne	ection mode	☐ Horizon	ital outlet			☐ Ver	tical outgoing li	ne(notice)		
Rema	The above "•" signs are described in detail below: 1.If the "leakage protection" function is added to the M.H type, there will be no grounding protection function. same time, the "external leakage transformer" component should be added to the "additional accessories" of 2.For M-type, "function table" is the optional function, but for H-type, function table is the basic configuration of 3.The mother row can rotate 90 degrees, horizontal wiring and vertical wiring can be converted at will.				es" column.					



