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ZHEJIANG MULANG ELECTRIC TECHNOLOGY CO., LTD.

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*Our company reserves the right to make changes for product technological progress and upgrades. Any changes will not be notified separately.

*The images and technical instructions in this manual may differ from reality. Please refer to the actual product and user manual for accuracy.

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MiLELE

PRODUCT SELECTION GUIDE

Professional manufacturer of low-voltage products

ZHEJIANG MULANG ELECTRIC TECHNOLOGY CO., LTD.

MiLELE

MULANG ELECTRIC

Professional manufacturer of low-voltage products

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All along, stemming from the pursuit of quality, relying on the pioneering spirit of perseverance, innovation, and focus, and constantly striving for excellence in technology,We will devote ourselves to research and development, creating excellent quality. Mulang Electric will continue to grow through innovation and provide customers with higher quality products and services.

MiLELE

COMPANY PROFILE

Zhejiang Mulang Electric Technology Co., Ltd.is an enterprise engaged in the production, manufacturing and sales of intelligent high and low voltage electrical appliances, mainly producing: small circuit breakers, intelligent leakage circuit breakers, molded case circuit breakers, universal circuit breakers, AC contactors, knife switches, dual power supplies, CPS control and protection switches, low-voltage switchgear and other more than 2,000 specifications and models of industrial and construction low-voltage electrical appliances.

Since its establishment, the company has adhered to the road of independent innovation, scientific and technological research and development, and adhered to the spirit of dedication and striving for the first. Through the way of "internal training and external introduction", we have established a team with teamwork, hard work, and the courage to surpass and an elite team with international competitiveness, so as to provide customers with serious service and quality assurance products, and the products sell well in China. The company has advanced production equipment, strong technical force and complete testing equipment. The company specializes in the production of various types and specifications of low-voltage electrical products, and has taken the lead in winning various certificates in the same industry. The 21st century is an economic era, where enterprise competition and development coexist, and opportunities and challenges go hand in hand. Mulang people are determined to keep pace with the times and carry out a century-old planning blueprint, technology to the brand as the banner, technology as the core, marketing as the main body, human resources as the foundation, low-voltage electrical industry as the pillar, and strive to build a company with international brand, diversified market and diversified products.

2000

A variety of specifications and models

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CATALOG

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A Dual power automatic switch series

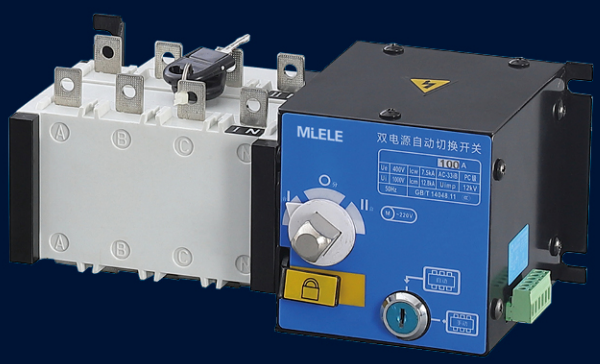
A Dual power automatic switch series

A Dual power automatic switch series

MLELE

MLQ5

Dual power automatic switch/Isolation type/PC level



A Dual power automatic switch series

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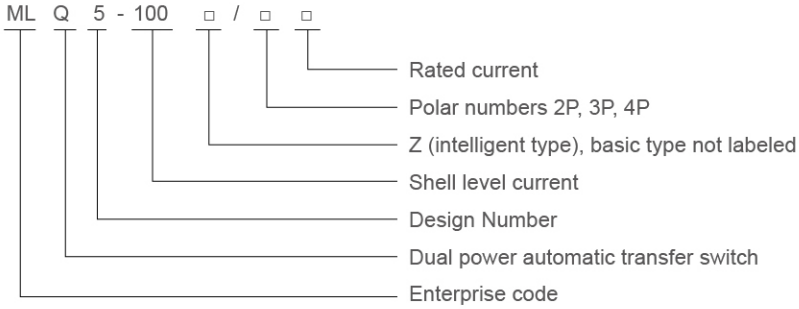
Model and its meaning



Switch structure description

Electrical key lock: Control the power supply of the internal control circuit of the control switch. When the electrical lock is turned on, the switch can achieve fully automatic, remote control, and strong "0" operation; When electrically locked, the switch can be manually operated.

Operating handle: When manually operating with the operating handle, the electrical lock must be turned off first.

Mechanical padlock: a specialized padlock mechanism for maintenance. During maintenance, turn the switch to the "0" position and then pull up the padlock on the padlock mechanism to prevent any accidents (pulling up the padlock will cut off the internal control power switch of the switch, which cannot be automatic and cannot be manually operated).

The three positions of the status indicator switch (I, 0, II), where "I" indicates that switch I is turned on and "II" indicates that switch II is turned on,

'0' indicates that both switch I and switch II are disconnected. The external signal of the wiring terminal is detailed in the instruction manual.

1. Fully automatic: refers to automatic switching and restoration. When the common power supply is cut off (or disconnected), the switch automatically switches to the backup power supply. When the common power supply returns to normal, the switch automatically returns to the common power supply.

2. Force "0": In emergency situations or equipment maintenance, activate the strong "0" self-locking button, and the switch will automatically switch to the "0" position to cut off the dual power supply.

3. Remote control (remote control): that is, remote operation control. When the "I" button is activated, the commonly used power supply is put into operation; Press the "II" button to activate the backup power supply.

4. Equipped with a generator (oil engine): When the mains power supply is cut off (or disconnected), a signal is sent to start the oil engine, causing it to automatically start. After the power generation is normal, the switch will automatically switch to the power supply. When the mains power supply returns to normal, the switch will automatically return to the mains power supply and send a signal to shut down the oil engine, causing it to automatically shut down.

5. Phase loss detection and protection: Detect and protect against power outages in any phase of the commonly used (backup) power supply.

The switch complies with GB/T14048.11:

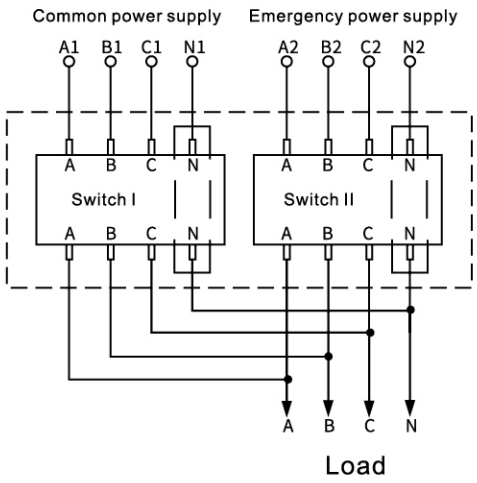
Rated working voltage (Ue): AC400V;

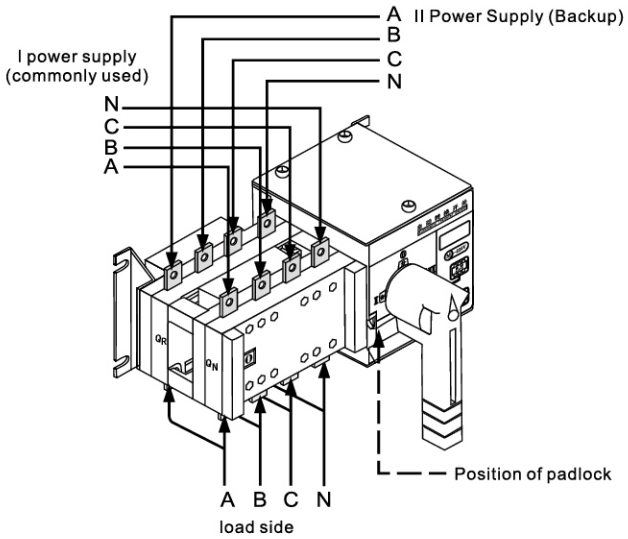
Rated connection capacity (ARms): 10Ie;

Rated breaking capacity (ARms): 8Ie;

Wiring diagram

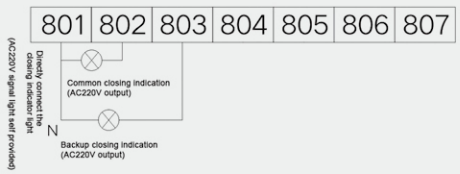
1. Main circuit wiring



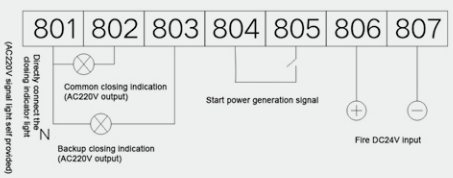


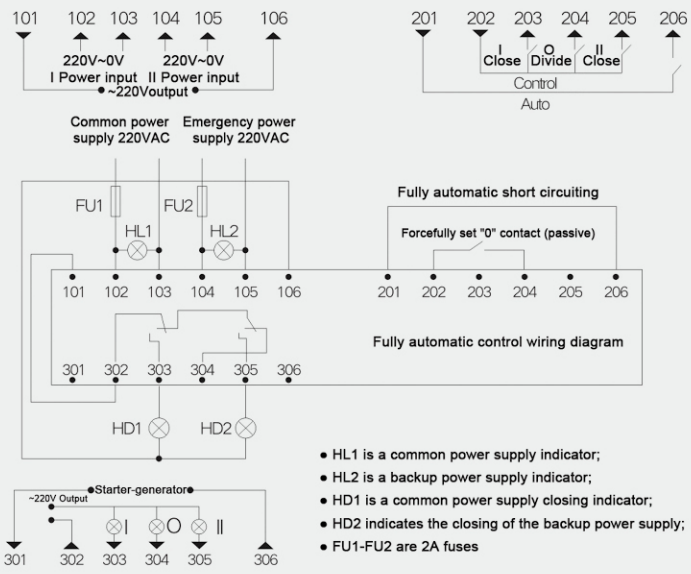
2. Secondary terminal control wire

Basic wiring diagram



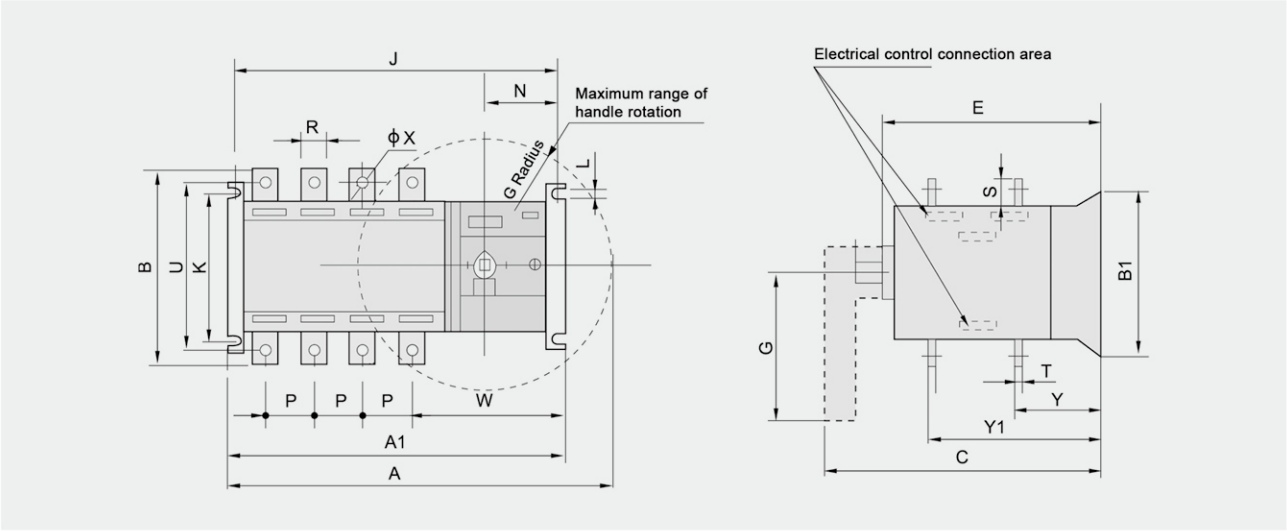
Fire type wiring diagram





Warning! This secondary wiring is strictly prohibited from connecting to active power sources! With AC220V output,It is strictly prohibited to reconnect the power supply again to avoid burning out the main circuit. Thank you for your cooperation!

Appearance and installation dimensions



Specifications In	100-3200 Automatic Transfer Switch Appearance Scale and Installation Scale																			
	A	A1	B	B1	C	E	G	J	K	L	N	P	R	S	T	U	W	ΦX	Y	Y1
MLQ5-100A/3	235	232	106	105	134	133	115	221.5	84	7	74.5	30	14	18	2.5	105	126	6	36	86
MLQ5-100A/4	247	244	106	105	134	133	115	233.5	84	7	74.5	30	14	18	2.5	105	126	6	36	86
MLQ5-125A/3	292	270	135	128	230	189	145	254	102	7	91	36	20	25	3.5	127	158	9	55	125
MLQ5-125A/4	322	300	135	128	230	189	145	284	102	7	91	36	20	25	3.5	127	158	9	55	125
MLQ5-160A/3	292	270	135	128	230	189	145	254	102	7	91	36	20	25	3.5	127	158	9	55	125
MLQ5-160A/4	322	300	135	128	230	189	145	284	102	7	91	36	20	25	3.5	127	158	9	55	125
MLQ5-250A/3	356	312	170	142	261	208	145	293	102	7	91	50	25	30	3.5	142	158	11	60	145
MLQ5-250A/4	406	362	170	142	261	208	145	343	102	7	91	50	25	30	3.5	142	168	11	60	145
MLQ5-400A/3	487	368	260	222	284	273	189	351	180	9	93	65	32	40	5	222	168	11	83	193
MLQ5-400A/4	552	433	260	222	284	273	189	416	180	9	93	65	32	40	5	222	203	11	83	193
MLQ5-630A/3	487	368	260	222	284	273	189	351	180	9	93	65	40	50	6	222	203	12	83	193
MLQ5-630A/4	552	433	260	222	284	273	189	416	180	9	93	65	40	50	6	222	203	12	83	193
MLQ5-800A/3	646	519	357	250	363	350	443	499	220	11	87	120	60	69	8	250	203	12.5	109	254
MLQ5-800A/4	760	633	357	250	363	350	443	613	220	11	87	120	60	69	8	250	207	12.5	109	254
MLQ5-1000A/3	646	519	357	250	363	350	443	499	220	11	87	120	60	69	8	250	207	12.5	109	254
MLQ5-1000A/4	760	633	357	250	363	350	443	613	220	11	87	120	60	69	8	250	207	12.5	109	254
MLQ5-1250A/3	646	519	357	250	363	350	443	499	220	11	87	120	80	69	8	250	207	13	110	255
MLQ5-1250A/4	760	633	357	250	363	350	443	613	220	11	87	120	80	69	8	250	207	13	110	255
MLQ5-1600A/3	676	519	357	250	363	350	443	499	220	11	87	120	80	69	10	250	207	13	110	255
MLQ5-1600A/4	760	633	357	250	363	350	443	613	220	11	87	120	80	69	10	250	207	13	110	255
MLQ5-2000A	800	633	460		542		447	610			84.5		80	120	10					169
MLQ5-2500A	800	633	460		542		447	610			84.5		80	125	15					174
MLQ5-3200A	800	633	460		542		447	610			84.5		80	130	20					179

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MLQ2

(New) Dual power automatic switch/isolation type/PC level

A Dual power automatic switch series

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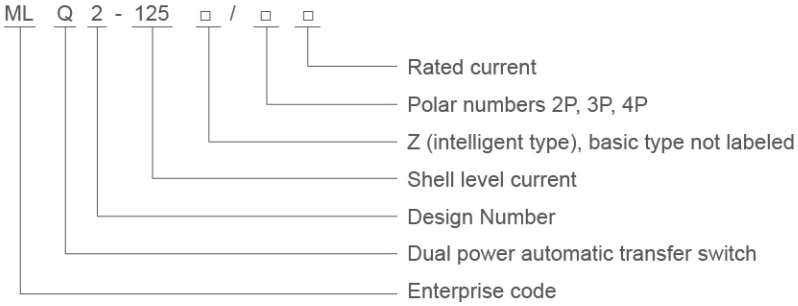
Model and its meaning



Switch structure description

Button control: Control the power supply of the internal control circuit of the switch. When the button is set to automatic, the switch can achieve fully automatic, remote control, and strong "0" operation; When electrically locked, the switch can be manually operated.

Operation handle: When manually operating with the operation handle, the button must be manually pressed.

Mechanical padlock: a specialized padlock mechanism for maintenance. During maintenance, turn the switch to the "0" position and then pull up the padlock on the padlock mechanism to prevent any accidents (pulling up the padlock will cut off the internal control power switch of the switch, which cannot be automatic and cannot be manually operated).

The three positions of the status indicator switch (I, 0, II), where "I" indicates that switch I is turned on and "II" indicates that switch II is turned on,

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1. Fully automatic: refers to automatic switching and restoration. When the common power supply is cut off (or disconnected), the switch automatically switches to the backup power supply. When the common power supply returns to normal, the switch automatically returns to the common power supply.

2. Force "0": In emergency situations or equipment maintenance, activate the strong "0" self-locking button, and the switch will automatically switch to the "0" position to cut off the dual power supply.

3. Remote control (remote control): that is, remote operation control. When the "I" button is activated, the commonly used power supply is put into operation; Press the "II" button to activate the backup power supply.

4. Equipped with a generator (oil engine): When the mains power supply is cut off (or disconnected), a signal is sent to start the oil engine, causing it to automatically start. After the power generation is normal, the switch will automatically switch to the power supply. When the mains power supply returns to normal, the switch will automatically return to the mains power supply and send a signal to shut down the oil engine, causing it to automatically shut down.

5. Phase loss detection and protection: Detect and protect against power outages in any phase of the commonly used (backup) power supply.

The switch complies with GB/T14048.11:

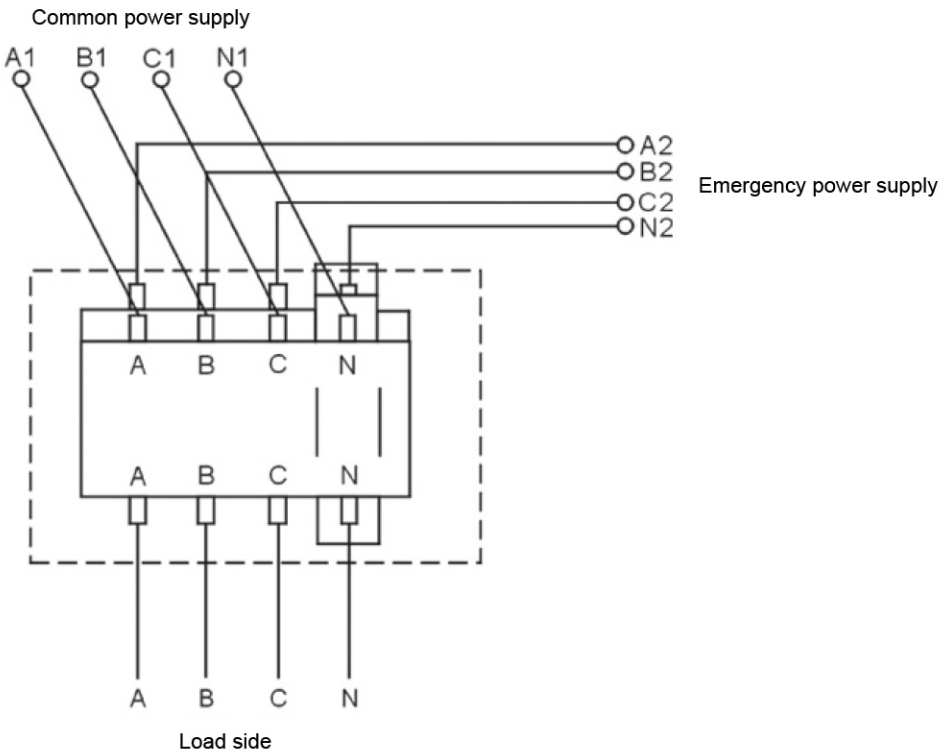
Rated working voltage (Ue): AC400V;

Rated connection capacity (ARms): 10Ie;

Rated breaking capacity (ARms): 8Ie;

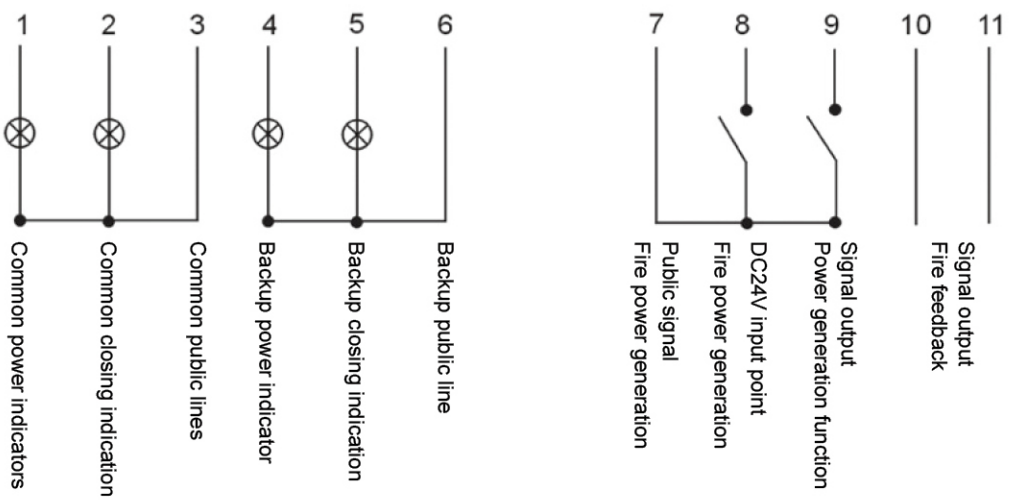
Wiring diagram

1. Main circuit wiring

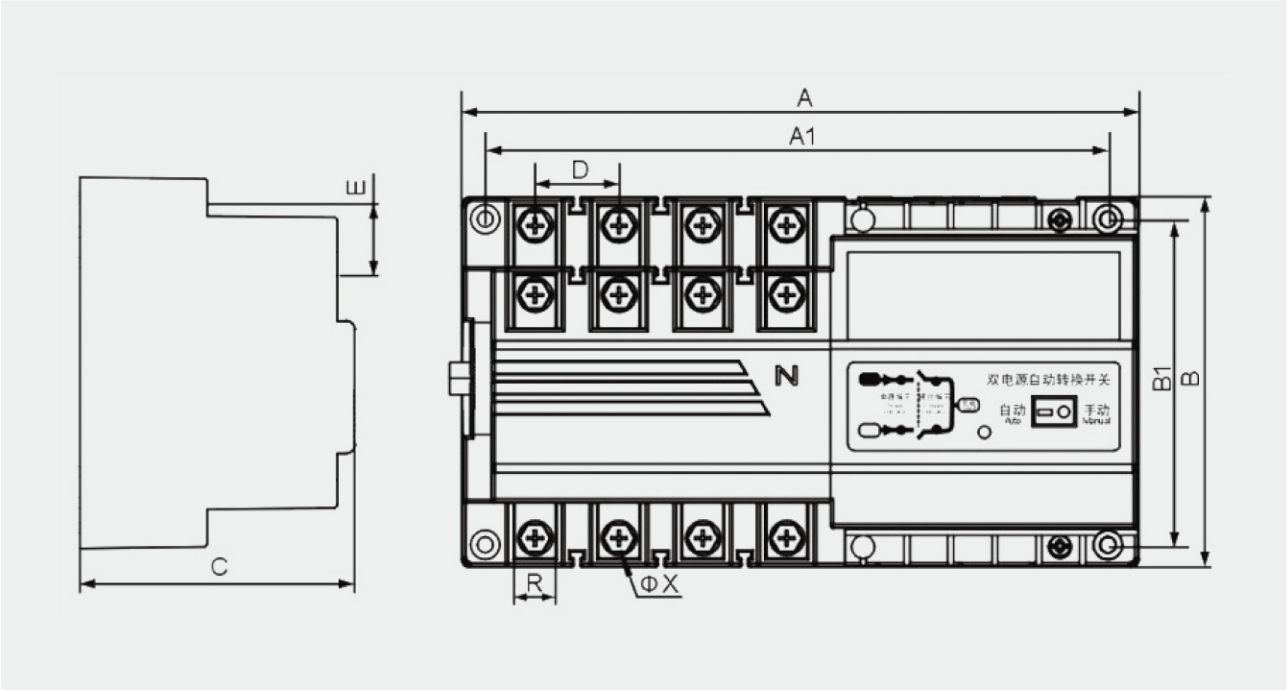


2. Secondary terminal control wire

External terminal wiring diagram (125-630 wiring method)



Appearance and installation dimensions



Size mm / Model specifications	A	A1	B	B1	C	D	E	R	ΦX
MLQ2-46-125/4P	235	217	129	113	95	29	24	14	6
MLQ2-46-250/4P	310	291	176	150	131	46	28	25	8
MLQ2-46-630/4P	452	429	255	221	199	65	40	40	12

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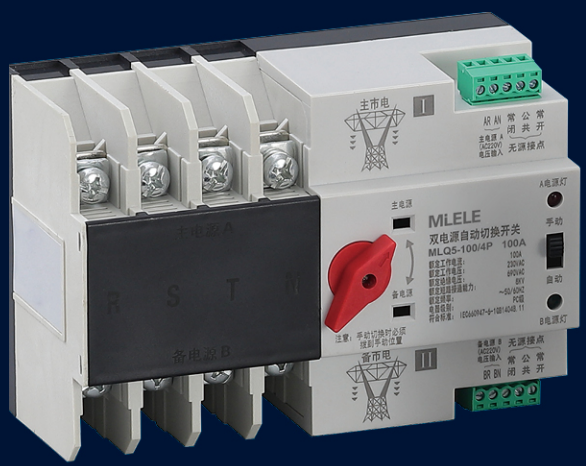
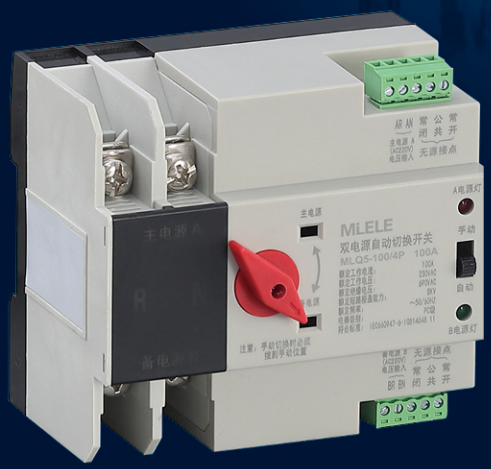
MLQ2

(Micro) Dual Power Automatic Switching Switch/Isolation Type/PC Class





A Dual power automatic switch series

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Overview

The dual power automatic switch is a newly developed miniature household power conversion switch. This switch is mainly used to test whether the main or backup power supply is working properly. When the normal power supply is abnormal, the backup power supply will immediately start working to ensure the continuity, reliability, and safety of the power supply. This product is designed specifically for household rail installation and is specifically used for PZ30 distribution boxes.

The dual power automatic switch is suitable for emergency power supply systems with 50 or 60Hz rated 400V AC. ATS has the characteristics of solid construction, reliable conversion, easy installation and maintenance, and long service life. Widely used in various situations where power outages cannot be sustained, it can be operated by electricity or manually. ATS is composed of TSE and controller.

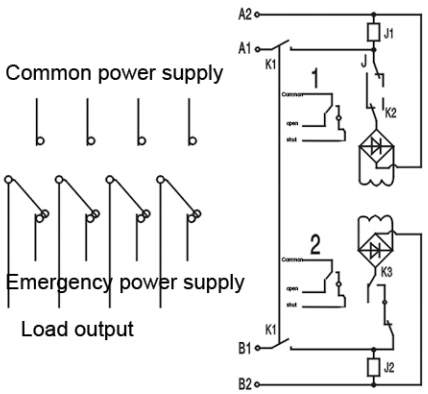
Model and its meaning

ML Q 2 - 100 □ / □ □

- Rated current
- Polar numbers 2P, 3P, 4P
- Z (intelligent type), basic type not labeled
- Shell level current
- Design Number
- Dual power automatic transfer switch
- Enterprise code

Wiring diagram

1. Main circuit wiring



K1: Manual/Automatic Selection Switch

K2, K3: Internal valve position switch of the product

J1: Commonly used 220VA power relay

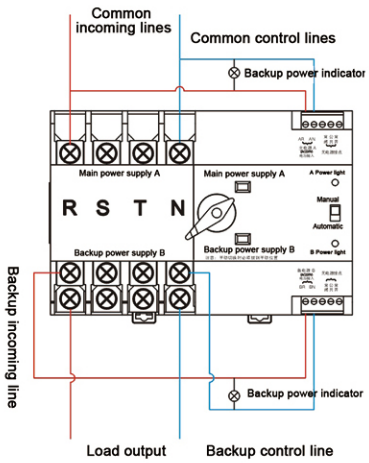
J2: Backup 220VB power relay

1: Passive signal output of power supply A

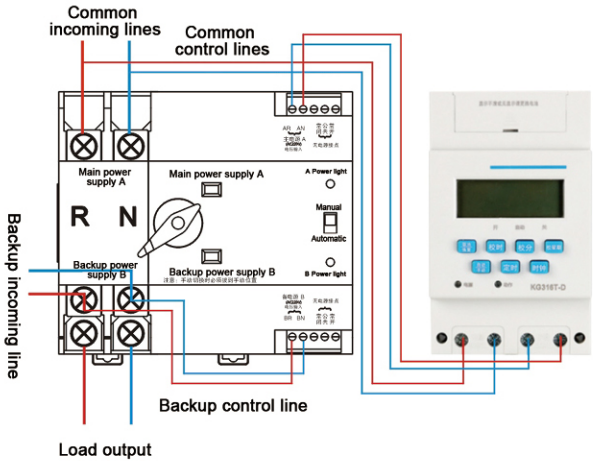
2: Passive signal output of power supply B

2. Secondary terminal control wire

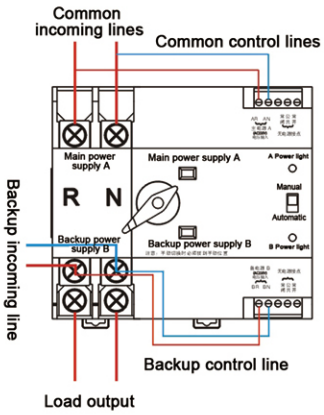
Controller wiring diagram



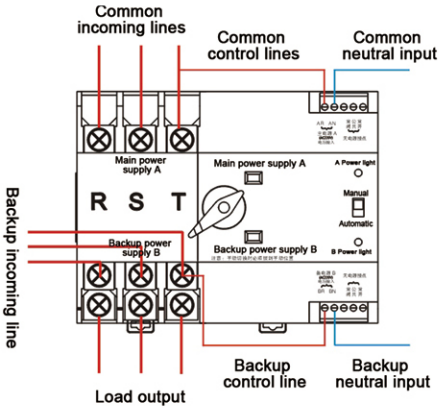
Timed switching of wiring methods



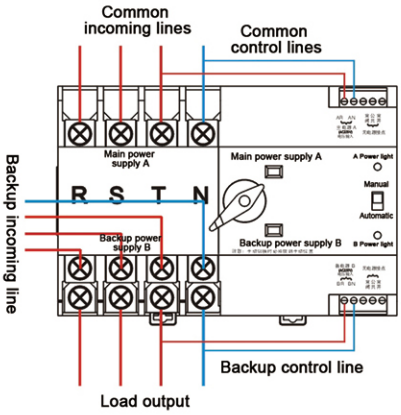
100/2P Wiring diagram



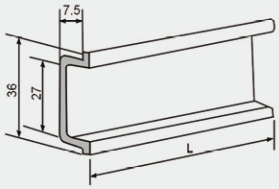
100/3P Wiring diagram

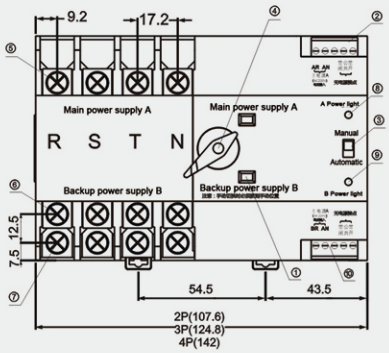


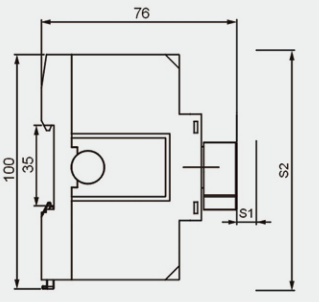
100/4P Wiring diagram



Appearance and installation dimensions







Safe distance: S1: ≥30mm S2: ≥203mm

① Status position indication
② Main power terminal and passive signal (AC220V)
③ Manual/automatic switch
④ Manual handle
⑤ Common power supply side main terminal
⑥ Main terminal on the backup power supply side
⑦ Main terminal on the load wiring side
⑧ A power indicator light
⑨ B power indicator light
⑩ Backup power supply wiring terminal and passive signal (AC220V)

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MLQ3

Dual power automatic switch/terminal type/CB level

A Dual power automatic switch series

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Overview

With the rapid development of technology today, power system equipment is gradually moving towards centralized monitoring and intelligence, that is, weak current (electronic) control of strong current. Our company has developed a new generation of intelligent dual power automatic switching system based on advanced foreign technology and the actual needs of domestic users. It is based on the latest microcomputer control system, designed with electromagnetic compatibility, strong anti-interference ability, stable and reliable long-term operation, and equipped with a large backlit LCD display, forming a good human-machine dialogue interface for users. The operation warning is simple and highly intelligent, making it an ideal new type of electromechanical integrated dual power automatic switching system. Pioneering a new era of intelligent and networked development for dual power automatic switching systems, it is the most ideal replacement product for similar products in China.

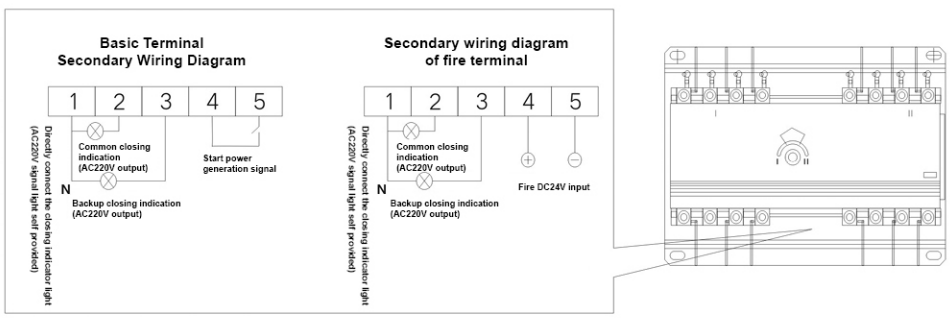
Model and its meaning

ML Q 3 □ □ □

- Rated working current
- Extreme numbers
- Rated current of shell level
- Design Number
- Dual power automatic transfer switch
- Enterprise code

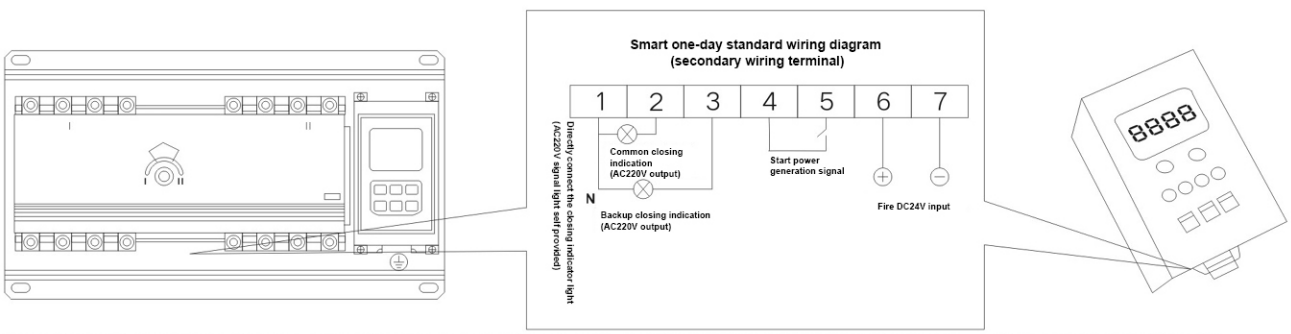
Wiring diagram

1. Terminal type wiring diagram



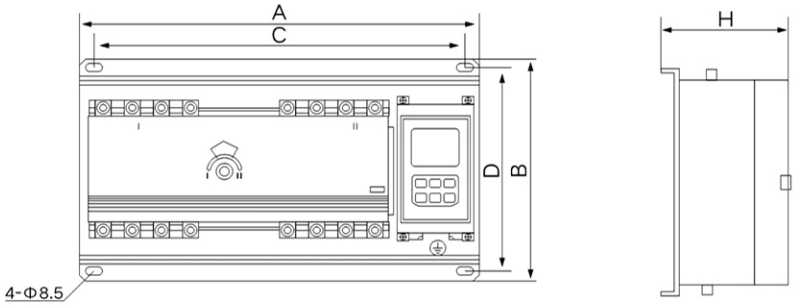
Warning! This secondary wiring is strictly prohibited from connecting to active power sources! With AC220V output, it is strictly prohibited to reconnect the power supply to avoid burning out the main circuit. Thank you for your cooperation!

2. Terminal intelligent wiring diagram



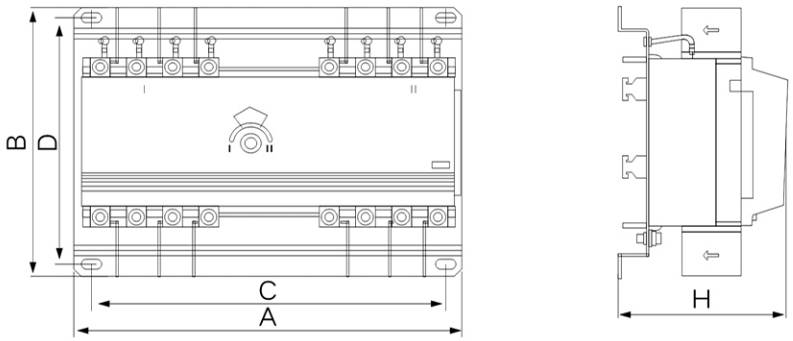
Warning! This secondary wiring is strictly prohibited from connecting to active power sources! With AC220V output, it is strictly prohibited to reconnect the power supply to avoid burning out the main circuit. Thank you for your cooperation!

Appearance and installation dimensions



Installation dimensions for end type 63-1250A

Model (Intelligent)	Series(P)	Dimensions (mm)			Installation size (mm)	
		A	B	H	C	D
MLQ3-63	3、4	380	240	140	345	220
MLQ3-125	3、4	420	240	130	385	220
MLQ3-250	3、4	470	240	145	435	220
MLQ3-400	3、4	615	330	200	555	300
MLQ3-630	3、4	740	330	210	680	300
MLQ3-800	3	720	350	220	660	320
	4	790	350	220	735	320
MLQ3-1250	3	730	475	255	685	366
	4	800	475	255	755	366
MLQ3-1600	3	730	515	255	685	366
	4	800	515	255	755	366



Installation size of end intelligent type 63-1250A

Model (Intelligent)	Series(P)	Dimensions (mm)			Installation size (mm)	
		A	B	H	C	D
MLQ3-63	3、4	290	240	140	255	220
MLQ3-125	3、4	320	200	130	285	180
MLQ3-250	3、4	370	210	145	338	190
MLQ3-400	3、4	525	330	200	465	300
MLQ3-630	3、4	650	330	210	585	300
MLQ3-800	3	615	350	220	550	320
	4	685	350	220	630	320
MLQ3-1250	3	695	475	255	650	365
	4	695	475	255	650	365
MLQ3-1600	3	695	515	255	650	365
	4	695	515	255	650	365

MLELE

MLQ2S

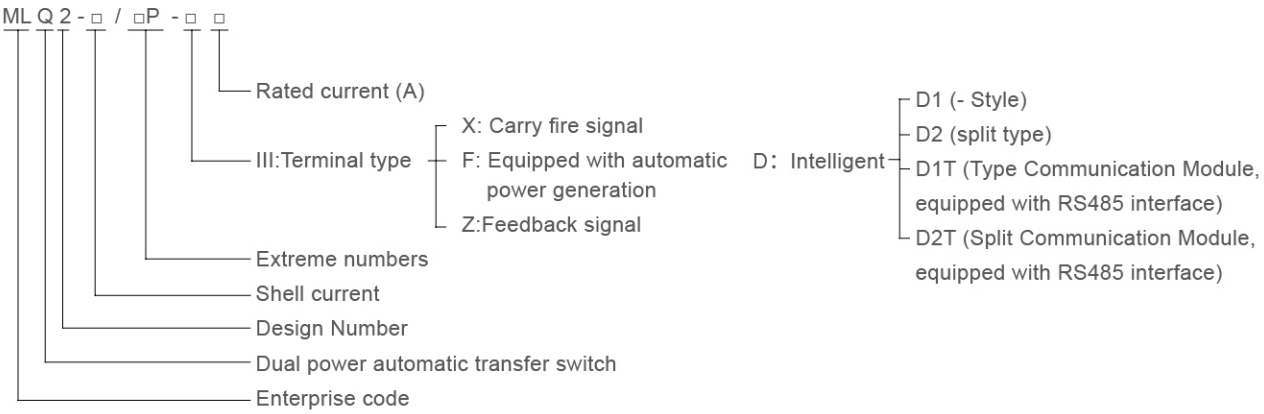
(CB level) motor type dual power automatic transfer switch

A Dual power automatic switch series

Structural characteristics

- Control device: LCD controller
- Product structure: small size, large current, simple structure, ATS-integration
- Features: fast switching speed, low failure rate, easy maintenance, reliable performance (with automatic switching time adjustable, 1s~99s)
- Wiring: cable in front of board
- Conversion mode: grid-to-grid, grid-to-generator, self-investment and self-recovery, self-investment and non-recovery, and mutual backup
- Product shell frame: 63, 100, 225, 400, 630, 800, 1250, 1600
- Product current: 20, 32, 40, 63, 80, 100, 125, 160, 200, 225, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600A
- Product Category:Circuit Breaker(CM1、TM30)
- Number of poles: 3, 4
- Product standard: GB/T14048.11
- ATS level: CB class, with overload and short circuit protection

Model and its meaning

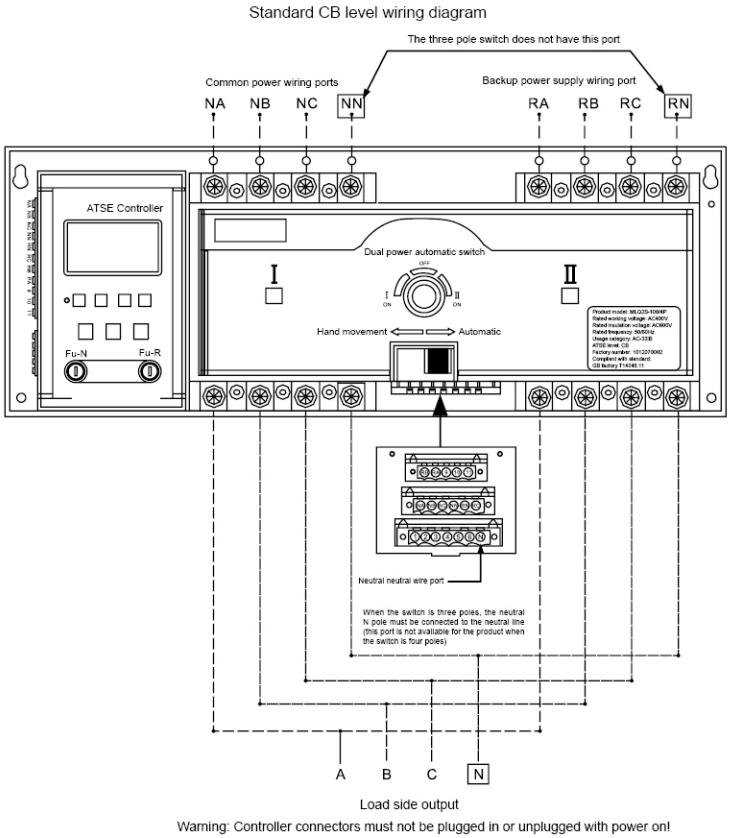


Note: 1. The standard configuration of the D-type controller includes (fire DC24V, automatic power generation) functions;
2. The Type III standard does not come with fire protection or automatic power generation functions. If needed, orders must be notified separately.

Technical requirement

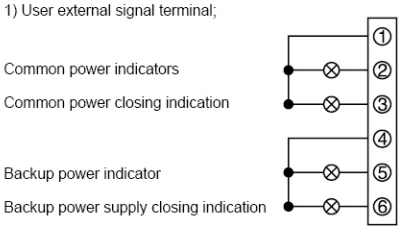
- In automatic transmission, when the common power supply is under-voltage, over-voltage, and out of voltage, it is converted to the standby power supply; When the standby power supply has the same fault, it will be switched to the double position, and the display will automatically alarm at the same time
- LCD screen protection 30s, the screen is displayed when the button is the first time, and the second time you can enter the settings, and the password is required to enter the settings;
- When the manual setting is garbled (crash), there is a reset key to reset to the set value;
- When the controller is set in the automatic and manual position, the display screen shows the double point when the double key on the controller panel is pressed, but does not alarm;
- When the power supply fails to return to normal within the set value, the dual power supply will not be switched, but switched instead.

Wiring diagram



Warning: Controller connectors must not be plugged in or unplugged with power on!

Tip:
1) User external signal terminal;



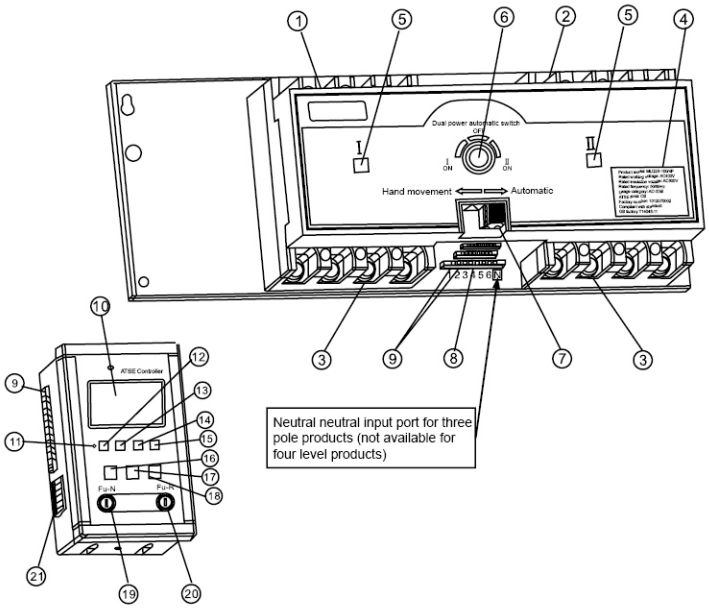
Signal light AC200V, users can connect it themselves as needed

2.) When the switch is split, the port (NA-11#) of the controller signal terminal is connected with the wiring harness that comes with the switch.

3.) When the switch is integrated, the port (NA-11#) of the controller signal terminal is internally linked when it leaves the factory, and the user does not need to connect.

4.) The dotted line in the figure is connected by the user.

Product panel enclosure instructions



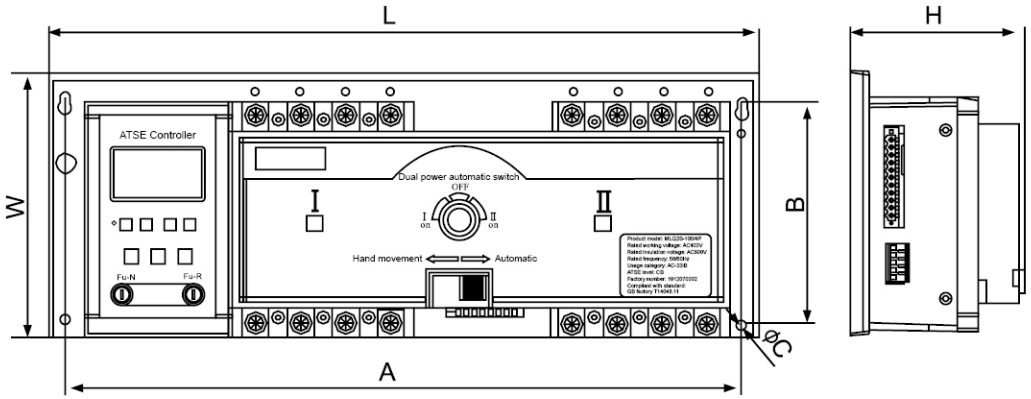
① The main terminal of the commonly used power supply inlet
② The main terminal of the standby power inlet
③ Main terminal on the load side
④ Signage
⑤ Commonly used power supply opening and closing indicator
⑥ Handle jack
⑦ Jack seal plate puller
⑧ External signal terminals for users
⑨ Controller signal connection terminal
⑩ LCD display
⑪ Restore factory default keys
⑫ Set key
⑬ Displacement key
⑭ Numeric keys
⑮ Numeric subtraction
⑯ Manual keys
⑰ Auto key
⑱ Double split key
⑲ Commonly used power supply fuse
⑳ Standby power supply fuse
㉑ Generator signal port and fire connection port

The circuit breaker meets the standard

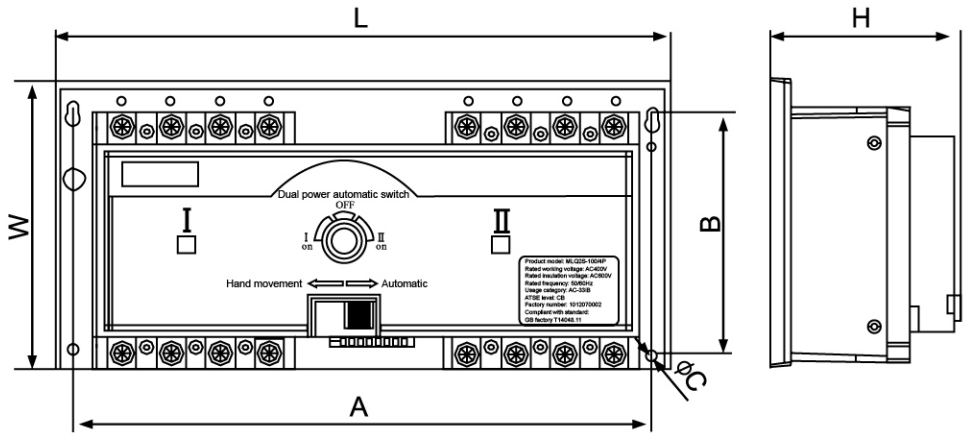
Name \ Model		MLQ2S-100(63)	MLQ2S-225	MLQ2S-400	MLQ2S-630	MLQ2S-800	MLQ2S-1250	MLQ2S-1600
Usage category		AC-33iB						
Rated working voltage Ue		AC400V					AC380V	
Rated insulation voltage Ui		690V						
Rated impulse withstand voltage Uimp		6kV	6kV	6kV	6kV	6kV	8kV	8kV
Rated short-circuit breaking capacity Icn		10kA	10kA	20kA	30kA	30kA	30kA	30kA
Rated short-circuit connection capacity Icm		17kA	17kA	40kA	63kA	63kA	63kA	63kA
Service life (times)	Mechanics	4500	5000	3000	2000	2000	2500	2500
	Electrical	1500	1000	1000	1000	1000	500	500
Extreme numbers		3、4						
Production cycle (seconds/time)		30S		60S				
Switching time		0~99S						

Appearance and installation dimensions

1. Switch body, external dimensions, installation dimensions



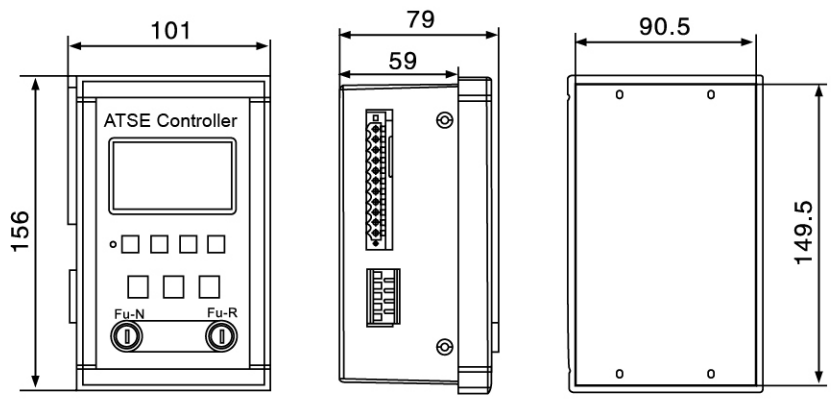
Model \ Size	Number of poles	Dimensions (mm) I	W	H	Installation size (mm) A	B	φC
MLQ2S-63	3P	390	157	130	370	130	5.5
	4P	415			395		
MLQ2S-100	3P	442	174	115	422	147	6.5
	4P	472			452		
MLQ2S-225	3P	481	189	135	461	162	6.5
	4P	516			496		
MLQ2S-400	3P	608	282	195	582	252	8
	4P	655			629		
MLQ2S-630	3P	685	295	200	659	264.5	8
	4P	742			716		
MLQ2S-800	3P	713	305	190	689	274.5	10
	4P	836			812		
MLQ2S-1250	3P	713	358	240	689	328	10
	4P	836			812		
MLQ2S-1600	3P	713	475	240	689	350	10
	4P	836			812		



Split type and end type appearance and installation dimensions

Model \ Size / Number of poles		Dimensions (mm)			Installation size (mm)		
		I	W	H	A	B	φC
MLQ2S-63	3P	285	157	130	265	130	5.5
	4P	310			290		
MLQ2S-100	3P	337	174	115	317	147	6.5
	4P	367			347		
MLQ2S-225	3P	376	189	135	356	162	6.5
	4P	411			391		
MLQ2S-400	3P	503	282	195	479	252	8
	4P	550			524		
MLQ2S-630	3P	584	295	200	558	264.5	8
	4P	641			615		
MLQ2S-800	3P	616	305	190	592	274.5	10
	4P	743			719		
MLQ2S-1250	3P	616	358	240	592	328	10
	4P	743			719		
MLQ2S-1600	3P	616	475	240	592	350	10
	4P	743			719		

Dimensions and opening dimensions of intelligent controller



External dimensions　External dimensions　Opening dimension

MLELE

MLQ2

Dual power automatic switch/mini/CB level

A Dual power automatic switch series

www.chmldq.com / www.mlele.com

Model and its meaning

ML Q 2 - 63 □ / □ □

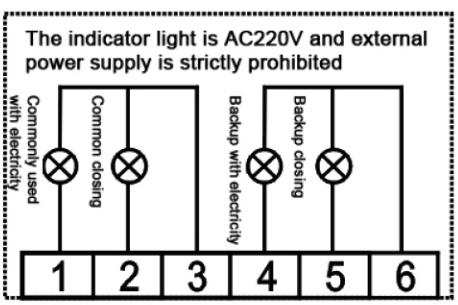
- Rated current
- Polar numbers 2P, 3P, 4P
- Z (intelligent type), basic type not labeled
- Shell level current
- Design Number
- Dual power automatic transfer switch
- Enterprise code

Working principle

This series of dual power controllers and drive mechanisms both use AC220V power supply, and their power signals depend on the A-phase and N-line of the commonly used switch or backup switch input ports. When the dual power supply is in automatic mode, when the voltage of the commonly used switch input A and N lines is normal (AC190-240V), regardless of whether the voltage of the commonly used power supply B and C phases and the backup switch A, B, C, N phases is normal, the commonly used switch will be closed first. At this time, the power indicator light and the common closing indicator light are on. When there is no voltage on the A-phase and N-phase of the commonly used switch input, and the voltage on the A-phase and N-phase of the backup switch input is normal, regardless of whether the voltage on the B-phase and C-phase of the normal and backup switches is normal, the dual power supply will switch to the backup closing. At this time, the power indicator light and backup closing indicator light are on, and the manual function can be used regardless of whether the common power supply and backup power supply have voltage. When operating manually, the manual automatic button should be placed in the manual operation position. When the handle is pushed clockwise to the terminal, the backup power circuit breaker R opens and the common power circuit breaker N closes; When the handle is pushed counterclockwise to the terminal, the backup power circuit breaker R closes and the common power circuit breaker N opens.

Installation dimensions and wiring diagram

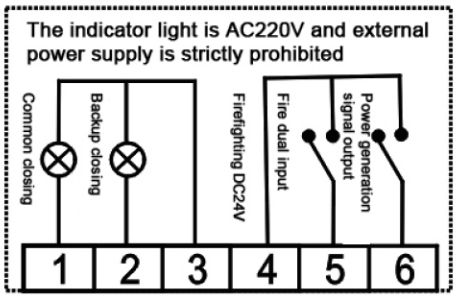
(Basic Type) Terminal Wiring Schematic Diagram



Terminal:
1. Commonly used electric indicator output
2. Common closing indication output
3. Common public neutral line output
4. Backup power indicator output
5. Backup closing indication output
6. Backup public neutral line output

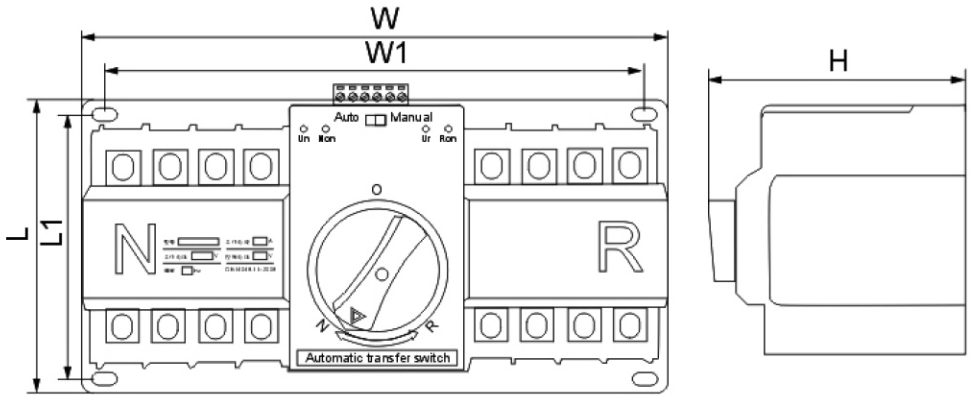
Note: When the dual power supply is three poles, please connect the common neutral wire to terminal 3 and the spare neutral wire to terminal 6.

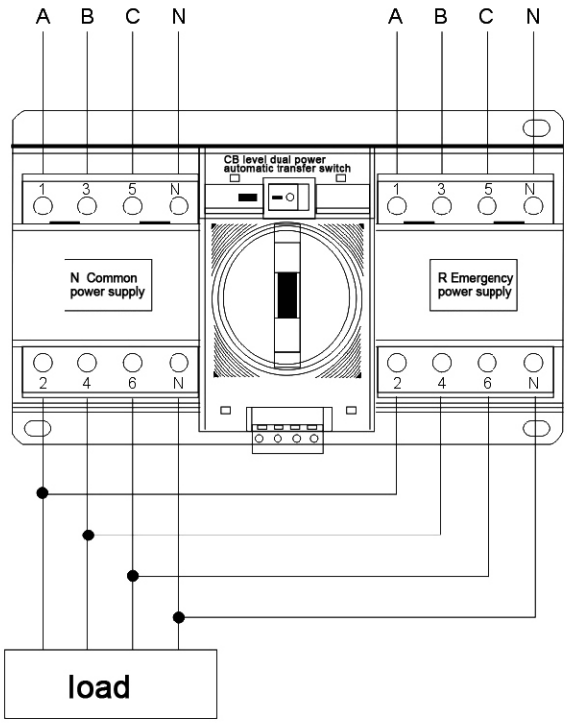
Schematic diagram of terminal wiring for fire protection and power generation types



Terminal:
1. Common closing indication output
2. Backup closing indication output
5. Public neutral line output
4. Fire dual split (DC24V) signal input
5. Signal output of power generation oil generator
6. Fire power generation public signal point

Note: When the dual power supply is three poles, please connect the commonly used backup common neutral line to terminal 3.





Specifications \ Size mm	W	W1	L	L1	H
MLQ2-63/2P	150	135	132	120	122
MLQ2-63/3P	185	165	132	120	122
MLQ2-63/4P	220	200	132	120	122

MLELE

MLCPS

Control and protective switching device

B Control and protection switch series

www.chmldq.com / www.mlele.com

Product Overview

The MLCPS series control and protection switchgear achieves integrated and internally coordinated control and protection functions on a single structure product. It can replace various traditional separate components such as circuit breakers (fuses), contactors, overload (or overcurrent, phase failure) protection relays, starters, isolators, etc. It has the function of remote automatic control and local manual control for control operation, coordinated time current protection characteristics, control and protection coordination, continuous operation after short circuit, high breaking ability, small arcing distance, long service life, adjustable protection setting current, easy operation, and various supporting accessory modules. It can achieve control and protection of motor loads and distribution loads.

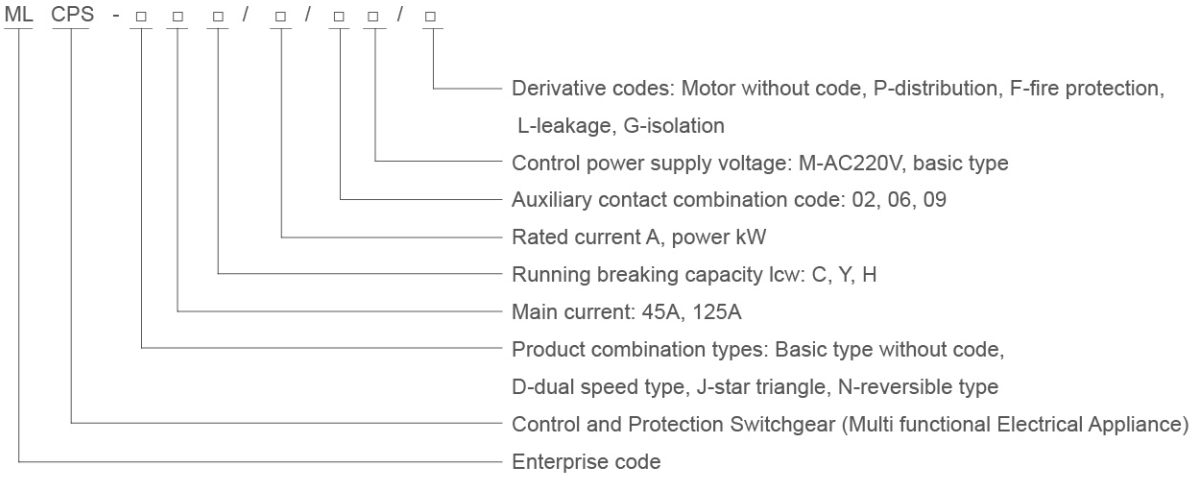
The emergence of multifunctional electrical appliances fundamentally solves various problems caused by unreasonable control and protection coordination due to the use of discrete components (usually circuit breakers or fuses+contactors+overload relays) in traditional methods. Especially, it overcomes the phenomenon of inconsistent protection characteristics and control characteristics when combining electrical products with different assessment standards, greatly improving the operational reliability and continuous performance of control and protection systems.

The first generation of MLCPS series control and protection switchgear products have a relatively large volume and use bimetallic strip technology for protection. Although the second-generation product solved the problem of large size, there was no significant breakthrough in protection technology. With the increasing application and deepening of microelectronics technology in the low-voltage electrical industry, our company takes the path of high-end product design based on the latest microelectronics technology, invests heavily in the development of products with international advanced level, and gathers the advantages of discrete components, with complete functions and reliable performance, providing a basic component for the simplification and optimization of low-voltage distribution and control systems.

Model and its meaning

The complete structure and model of the basic type should include: main body model+rated current and breaking capacity level of the main release, release, product function, control power supply and accessories.

The meanings of each part of the product model are as follows



Operating mechanism (main panel)

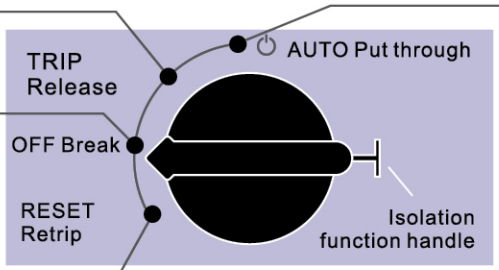
It can receive instantaneous short-circuit signals from each pole contact group and fault signals from electronic overload release, and disconnect the main circuit by controlling the contact to cut off the control coil circuit through the electromagnetic operating mechanism. After troubleshooting, reset by operating the knob. The symbols and indicator positions indicating the working status of the MLCPS operating mechanism on the main panel are shown in the following figure

Free release position:
In the connected circuit, if faults such as overcutting short circuit, phase failure, phase loss, overvoltage and undervoltage occur, the corresponding functional module in the product will act to disconnect both the main contact and the coil control contact

Automatic control position:
The internal coil control contacts of MLCPS switchgear are in the closed position, and the on/off of the circuit is controlled by the coil. In this state, remote automatic control can be achieved

Disconnect position:
The coil control contact is in the disconnected position

Retain position:
Only when the operation knob is turned to this position can the already tripped MLCPS switch be reset normally and then reconnected



Auxiliary contact module

The basic parameters of auxiliary contacts are shown in the table below. The auxiliary contacts are electrically separated, meaning that each group of contacts can be connected to different voltages; Each pair of auxiliary contact terminals is marked with a 2-digit number, with the single digit indicating the function number. 1 and 2 represent normally closed contacts, and 3 and 4 represent normally open contacts; The ten digit number of the symbol is the sequence number, which belongs to the same contact terminal and uses the same sequence number. All contacts with the same function use different sequence numbers. 95 and 98 indicate normally open contacts for fault signals, and 05 and 08 indicate normally open contacts for short-circuit signals.

When the main circuit experiences overload (or overcurrent, overvoltage, phase loss, etc.) faults, the operation knob is in TRIP, and the 05 and 08 short circuit alarm signals are closed. The 95 and 98 fault alarm signals are also closed, and the main circuit is disconnected.

Mechanical passive, isolated auxiliary contacts

Ith(A)	Ui(V)	Ue		Rated control capacity		Making capacity	
		AC(V)	DC(V)	AC(V)	DC(V)	AC(V)	DC(V)
6.3	690	48	24	300	120	1500	800
		110/127	48	500	90	3500	700
		220/240	110	600	75	6000	400
		380	220	520	68	7500	260
		/	440	/	61	/	220

Three pole basic product

MLCPS basic configuration: main body+electronic release+auxiliary contact group

-Short circuit instantaneous action

-Short circuit short delay or fixed time limit (panel adjustable)

-Overvoltage protection -Phase failure protection

-Undervoltage protection -Lack of phase protection

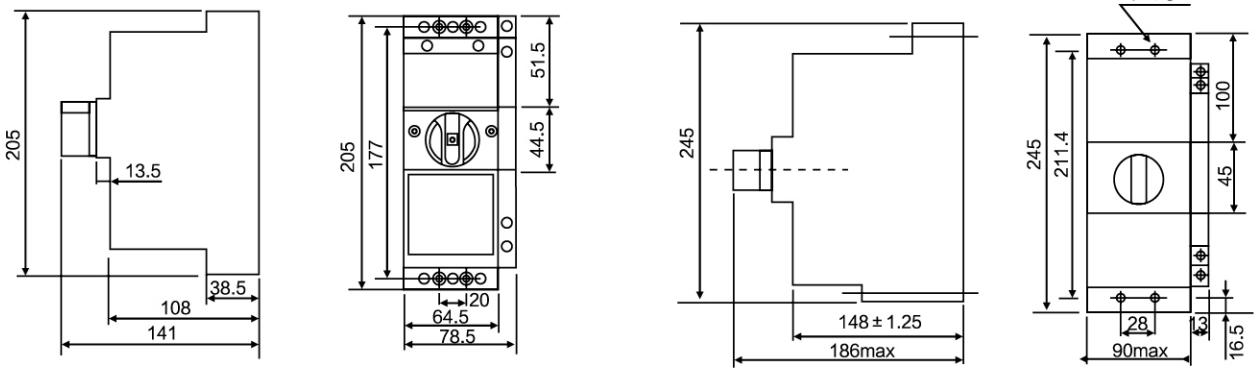
-Undercurrent protection -Three phase unbalance protection

-Blockage protection -Start delay function

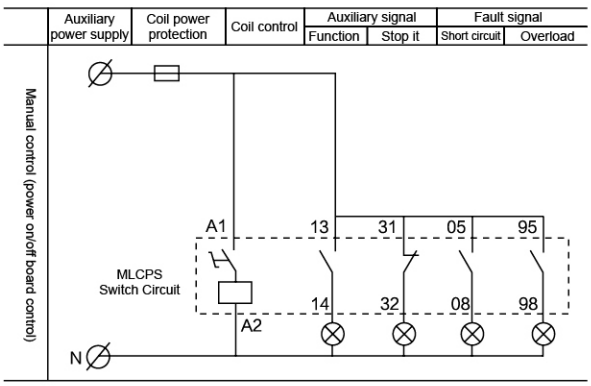
Outline drawing of three pole basic product

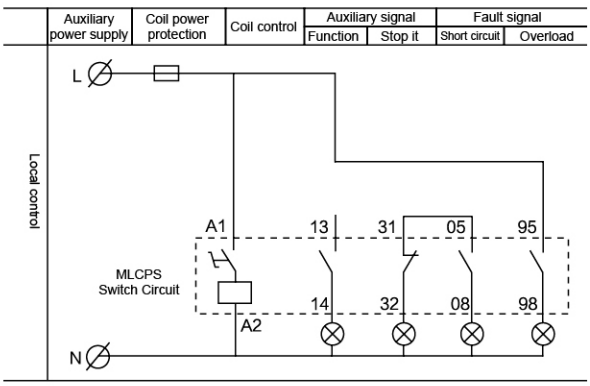
Three pole basic type appearance and installation dimensions (mm)

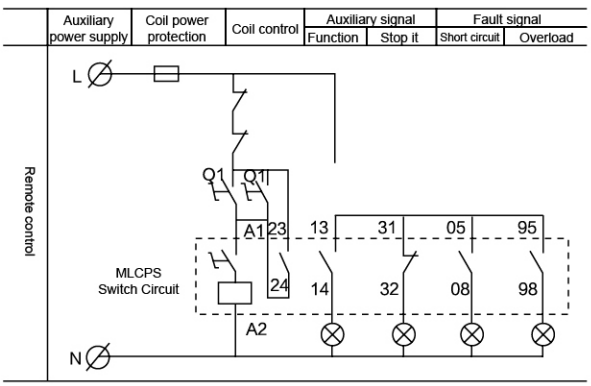
The external installation dimensions of MLCPS-45 and 125 are shown in the following figure

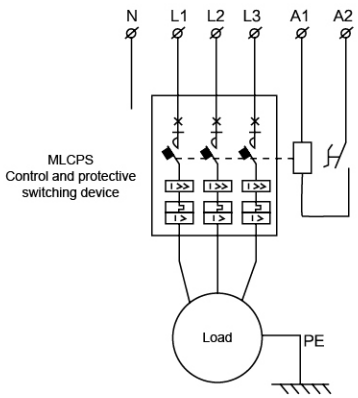


Electrical control diagram









MiLELE

MLPV-40

Series Solar Photovoltaic Surge Protector

Purpose and scope

MLPV-40 series surge protective device is suitable for the new energy solar energy power generation system, working voltage of 500V, 800V, 1000V. Installation position in the total power supply DC circuit systems, direct, indirect lightning current of lightning current or other transient overvoltage protection.

Model and meaning

ML - □ - PV - □

- Maximum Continuous Operating Voltage Uc(V~)
- Photovoltaic power surge protector
- Maximum discharge current (kA)
- Corporate code

Product Features

1、Surge protective device, plug

2、The visual window color said protector working state; green (normal), red (fault)

3、Hot melt flow double protection

4、The configuration remote communication interface, can realize remote control

Technical Parameters

Name	500V DC power supply lightning protection module	800V DC power supply lightning protection module	1000V DC power supply lightning protection module
Product model	MLPV-40	MLPV-40	MLPV-40
Normal flow capacity(kA8/20us)	20	20	20
Maximum flow capacity lanx(kA8/20μs)	40	40	40
Protection level (kV)	2.5	3	3.6
Response time(ns)	25	25	25
Rated voltage (VDC)	500	800	1000
Continue to work voltage (VDC)	550	880	1100
Leakage current 0.75U 1mA(μA)	≤20	≤20	≤20
Working temperature(℃)	-40~+85	-40~+85	-40~+85

Installation Instructions

1、The power must be cut off before installation, strictly charged operation。

2、series fuse or breaker in front of lightning protection module。

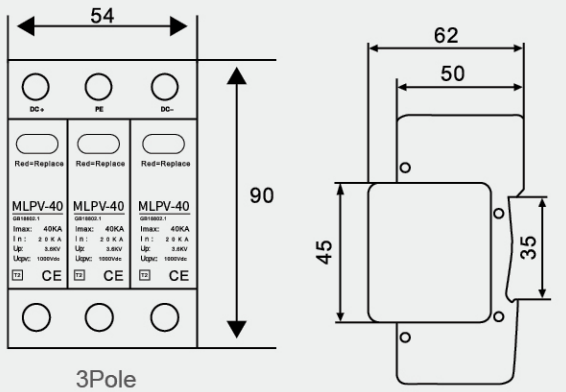
3、please install according to the installation diagram shown in connection, where in + positive line, as the negative wire, PE wire, not the wrong connection. After the installation is complete, close the circuit breaker (fuse) switch, check whether the normal work state。

4、after the installation of the module is inserted in place, check the anti co module is working。

5、lightning protection module during use, should be regularly tested and view the fault display window state,when a fault display window is terminal output red or remote alarm signal, said lightning protection module failure, should be timely repair or replacement。

6、parallel type power supply lightning protection module should be installed in parallel connection line, firm and reliable, and the requirement of short, coarse, straight。

Appearance and installation dimensions



3Pole

MiLELE

ML-I15

A Surge Protective Device

Surge protector series

www.chmldq.com / www.mlele.com

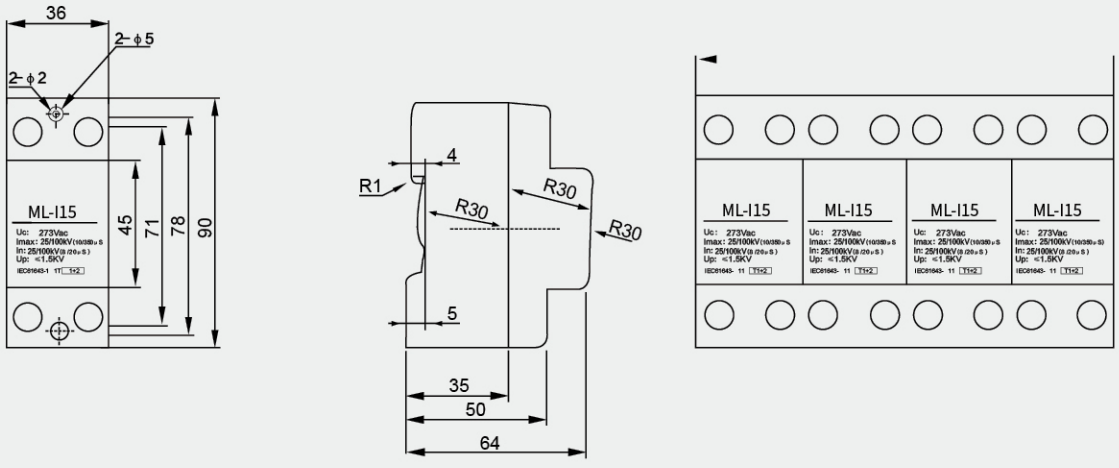
Normal working condition and installation

① The environment temperature is -40°C ~+80°C
② The altitude does not exceed 2000m
③ Relative humidity of not more than 90% (25°C)
④ Installation mode and TH35mm wide guide with
⑤ Application of ground pump flow "IT" "TT.TS, TN-N-S"
⑥ With the vertical tilt is not over 50
⑦ No shock vibration or no shake the place
⑧ No candle burst dangerous medium, and medium without gas enough to corrode metal and damage the insulation and dust

Technical Parameters

Model	ML-I15	
Configuration protection	1+1	3+1
Test category	Class I+II test	
Nominal frequency	50/60Hz	
Maximum continuous withstand voltage (Uc)	≥ 253VAC	
Norminal discharge current In(8/20μs) (kA)	≥25/50kA	≥25/100kA
Max.discharge current of Imax(8/20μs) (kA)	≥100kA	
Limp pulse discharge current at10/350μs[L-N]/[N-PE]	≥ 25/50kA	≥ 25/100kA
Protection voltage level up at 8/20μs[L-N]/[N-PE]	≤2.5	
Ability to extinguish discharge current according to[L-N]/[N-PE]Ifi	≥25kArms/100 Arms	
The remaining power is passed after the device works(ensure CO-Ordination feature directly with MOV element S20K275),According to TS-12:2009 Annex J with pulse current limp 25kA(10/350μs)	＜ 151 Jouls	
Temporary overpressure UTOV	≥440V（±1%）/120 min	
Response time（NS）	≤100	
Outline size(MM)	72*60*69	144*60*69
Failure indication	Green:normal Red：invalid	
Sectional area of wires	6-35MM²m^2	
Installation method	35MM standard din rail (EN50022/DIN46277-3)	
Environmental temperature	-40 ～ +80°C	
Shell material	Flame Retardant Nylon	
Protection grade	IP20	
Applied standards	IEC61643-11	

Appearance and installation dimensions



MiLELE

ML-I25

A Surge Protective Device

Surge protector series

www.chmldq.com / www.mlele.com

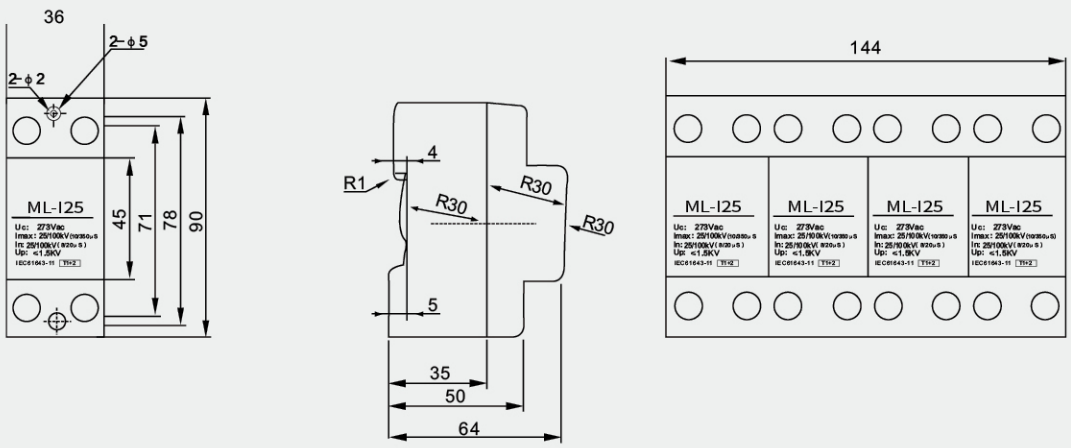
Normal working condition and installation

① The environment temperature is -40°C ~+80°C
② The altitude does not exceed 2000m
③ Relative humidity of not more than 90% (25°C)
④ Installation mode and TH35mm wide guide with
⑤ Application of ground pump flow "IT" "TT.TS, TN-N-S"
⑥ With the vertical tilt is not over 50
⑦ No shock vibration or no shake the place
⑧ No candle burst dangerous medium, and medium without gas enough to corrode metal and damage the insulation and dust

Technical Parameters

Model	ML-I25	
Configuration protection	1+1	3+1
Test category	Class I+II test	
Nominal frequency	50/60Hz	
Maximum continuous withstand voltage (Uc)	≥ 253VAC	
Norminal discharge current In(8/20μs) (kA)	≥25/50kA	≥25/100kA
Max.discharge current of Imax(8/20μs) (kA)	≥100kA	
Limp pulse discharge current at10/350μs[L-N]/[N-PE]	≥ 25/50kA	≥ 25/100kA
Protection voltage level up at 8/20μs[L-N]/[N-PE]	≤2.5	
Ability to extinguish discharge current according to[L-N]/[N-PE]Ifi	≥25kArms/100 Arms	
The remaining power is passed after the device works(ensure CO-Ordination feature directly with MOV element S20K275),According to TS-12:2009 Annex J with pulse current limp 25kA(10/350μs)	＜ 151 Jouls	
Temporary overpressure UTOV	≥440V（±1%）/120 min	
Response time（NS)	≤100	
Outline size(MM)	72*60*69	144*60*69
Failure indication	Green:normal Red：invalid	
Sectional area of wires	6-35MM²m^2	
Installation method	35MM standard din rail (EN50022/DIN46277-3)	
Environmental temperature	-40 ～ +80°C	
Shell material	Flame Retardant Nylon	
Protection grade	IP20	
Applied standards	IEC61643-11	

Appearance and installation dimensions



MiLELE

ML-I12.5

A Surge Protective Device

Surge protector series

www.chmldq.com / www.mlele.com

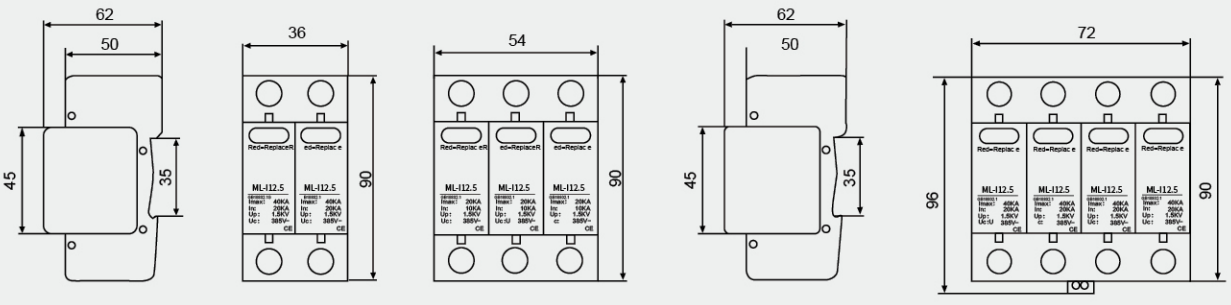
Normal working condition and installation

① The environment temperature is -40°C ~+80°C
② The altitude does not exceed 2000m
③ Relative humidity of not more than 90% (25°C)
④ Installation mode and TH35mm wide guide with
⑤ Application of ground pump flow "IT" "TT.TS, TN-N-S"
⑥ With the vertical tilt is not over 50
⑦ No shock vibration or no shake the place
⑧ No candle burst dangerous medium, and medium without gas enough to corrode metal and damage the insulation and dust

Technical Parameters

Model	ML-I12.5	
Configuration protection	1+1	3+1
Test category	Class I+II test	
Nominal frequency	50/60Hz	
Maximum continuous withstand voltage (Uc)	≥ 253VAC	
Norminal discharge current In(8/20μs) (kA)	≥25/50kA	≥25/100kA
Max.discharge current of Imax(8/20μs) (kA)	≥100kA	
Limp pulse discharge current at10/350μs[L-N]/[N-PE]	≥ 25/50kA	≥ 25/100kA
Protection voltage level up at 8/20μs[L-N]/[N-PE]	≤2.5	
Ability to extinguish discharge current according to[L-N]/[N-PE]Ifi	≥25kArms/100 Arms	
The remaining power is passed after the device works(ensure CO-Ordination feature directly with MOV element S20K275),According to TS-12:2009 Annex J with pulse current limp 25kA(10/350μs)	＜ 151 Jouls	
Temporary overpressure UTOV	≥440V（±1%）/120 min	
Response time （NS）	≤100	
Outline size(MM)	72*60*69	144*60*69
Failure indication	Green:normal Red：invalid	
Sectional area of wires	6-35MM²m^2	
Installation method	35MM standard din rail (EN50022/DIN46277-3)	
Environmental temperature	-40 ～ +80°C	
Shell material	Flame Retardant Nylon	
Protection grade	IP20	
Applied standards	IEC61643-11	

Appearance and installation dimensions



MLELE

ML-B60

Surge Protective Device

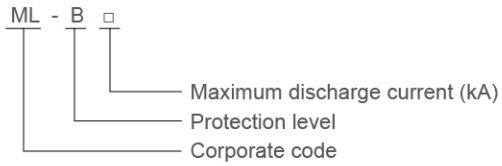
Surge protector series

www.chmldq.com / www.mlele.com

Purpose and scope

ML-B60 surge protection device (hereinafter referred to as the "protector") for AC 50/60 Hz, 400V and below the TN-S, TN-C, TN-C-S,TT, IT power supply system, the power grid caused by lightning or surge voltage protection.

Model and meaning



From the device failure

Module protector with failure from the device, when the protective device due to overheating, break-down failure, the failure disengagement device can automatically detach it from the power grid, also give an indication signal.

Protector normal signs shown in green, red label display failure detachment.

Technical Parameters

Index \ Model		ML-B60	ML-B80	ML-B100
Rated voltage of Un (V)		385V	385V	385V
Maximum continuous operating voltage Uc (~V)		385V	385V	385V
Voltage protection level of Up (kV)		2.2kV	2.5kV	2.5kV
Normal discharge current In (8/20μs) (kA)		30	40	60
Maximum discharge current of Imax (8/20 μs) (kA)		60	80	100
ns The response time of NS		＜25		
Test level		II Level		
width (mm)		18		
Color		White Red		
Protection grade		IP20		
Shell material		Reinforced flame retardant PBT		
Environmental temperature		-40°C ~+85°C		
A fuse or circuit breaker (A)		32A		
The line Specifications	Phase line, zero line	2.5~35mm^2		
	Wire	4.0~35mm^2		
	The signal line	1.5mm^2		

The installation position and Application

Installed in the LPZ1 or LPZ2 area and LPZ3 area at the junction,protection class II.

Protective device using standard 35mm track installation.

Protector adopts a copper wire connected to the 2.5-35mm^2,there are two kinds of wiring method.

(1)From the power supply switch wiring to the protector,and the protector line to the load side.This method is suitable for load disctribution box electric current below 100A.The use of wire section should beselectedaccording to the load current (see Figure 1)

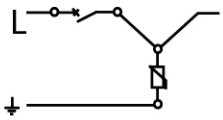


Figure 1

(2)From the power supply switch wiring to the protector,also from the line to load side power switch.This applies to the load current is more than 100A power disctribution box.

Connected to the protective conductor cross section is not affected by the load of electricity,But the length shall not exceed 500mm(see Figure 2).

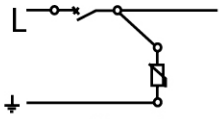
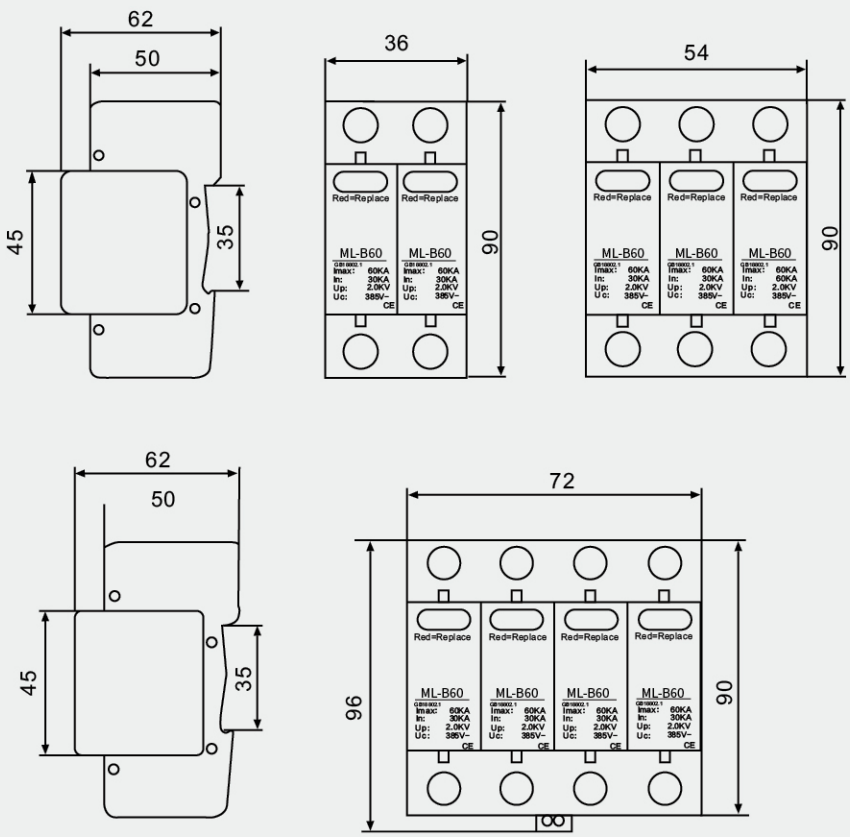


Figure 2

The grounding wire should be used more than 4mm^2 of dual color wire length,shall not exceed 500mm.

In order to prevent the surge protection device failure affects the normal operation of power grid,protection on the L line should string fuse are connected with a 32A.

Appearance and installation dimensions



MLELE

ML-B80/B100

Surge Protective Device

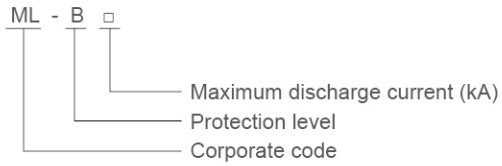
Surge protector series

www.chmldq.com / www.mlele.com

Purpose and scope

ML-B80/B100 surge protection device (hereinafter referred to as the "protector") for AC 50/60 Hz, 400V and below the TN-S, TN-C, TN-C-S,TT, IT power supply system, the power grid caused by lightning or surge voltage protection.

Model and meaning



From the device failure

Module protector with failure from the device, when the protective device due to overheating, break-down failure, the failure disengagement device can automatically detach it from the power grid, also give an indication signal.

Protector normal signs shown in green, red label display failure detachment.

Technical Parameters

Index \ Model		ML-B100	ML-B100	ML-B100
Rated voltage of Un (V)		275V	385V	420V
Maximum continuous operating voltage Uc (~V)		275V	385V	420V
Voltage protection level of Up (kV)		2.5kV	2.5kV	2.5kV
Normal discharge current In (8/20μs) (kA)		60	60	60
Maximum discharge current of Imax (8/20 μs) (kA)		100	100	100
ns The response time of NS		< 25		
Test level		II Level		
width (mm)		27		
Color		White		
Protection grade		IP20		
Shell material		Reinforced flame retardant PBT		
Environmental temperature		-40°C ~+85°C		
A fuse or circuit breaker (A)		40A		
The line Specifications	Phase line, zero line	2.5~35mm^2		
	Wire	4.0~35mm^2		
	The signal line	1.5mm^2		

The installation position and Application

Installed in the LPZ1 or LPZ2 area and LPZ3 area at the junction,protection class II.

Protective device using standard 35mm track installation.

Protector adopts a copper wire connected to the 2.5-35mm^2,there are two kinds of wiring method.

(1)From the power supply switch wiring to the protector,and the protector line to the load side.This method is suitable for load disctribution box electric current below 100A.The use of wire section should beselectedaccording to the load current (see Figure 1)

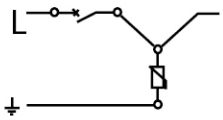


Figure 1

(2)From the power supply switch wiring to the protector,also from the line to load side power switch.This applies to the load current is more than 100A power disctribution box.

Connected to the protective conductor cross section is not affected by the load of electricity,But the length shall not exceed 500mm(see Figure 2).

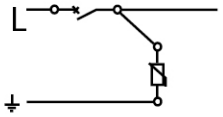
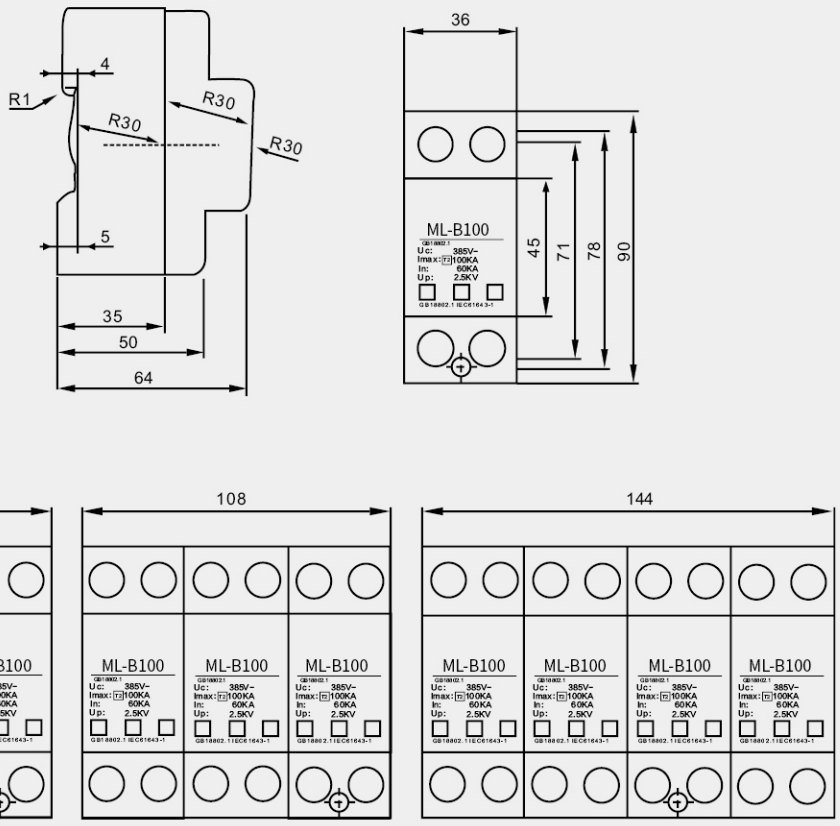


Figure 2

The grounding wire should be used more than 4mm^2 of dual color wire length,shall not exceed 500mm.

In order to prevent the surge protection device failure affects the normal operation of power grid,protection on the L line should string fuse are connected with a 40A.

Appearance and installation dimensions



MiLELE

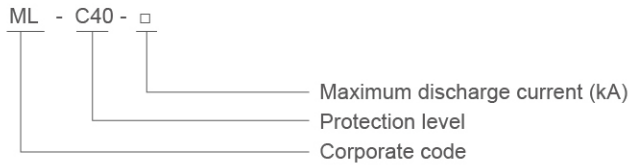
ML-C40

Surge Protective Device

Purpose and scope

ML-C40 surge protection device (hereinafter referred to as the "protector") for AC 50/60 Hz, 400V and below the TN-S, TN-C, TN-C-S,TT, IT power supply system, the power grid caused by lightning or surge voltage protection.

Model and meaning



From the device failure

Module protector with failure from the device, when the protective device due to overheating, break-down failure, the failure disengagement device can automatically detach it from the power grid, also give an indication signal.

Protector normal signs shown in green, red label display failure detachment.

Technical Parameters

Index \ Model		ML-C40	ML-C40	ML-C40
Rated voltage of Un (V)		275V	385V	420V
Maximum continuous operating voltage Uc (~V)		275V	385V	420V
Voltage protection level of Up (kV)		1.4kV	1.8kV	1.9kV
Normal discharge current In (8/20μs) (kA)		20	20	20
Maximum discharge current of Imax (8/20 μs) (kA)		40	40	40
ns The response time of NS		< 25		
Test level		II Level		
width (mm)		18		
Color		White Red		
Protection grade		IP20		
Shell material		Reinforced flame retardant PBT		
Environmental temperature		-40°C ~+85°C		
A fuse or circuit breaker (A)		20A		
The line Specifications	Phase line, zero line	2.5~35mm^2		
	W Wire	4.0~35mm^2		
	The signal line	1.5mm^2		

The installation position and Application

Installed in the LPZ1 or LPZ2 area and LPZ3 area at the junction,protection class II.

Protective device using standard 35mm track installation.

Protector adopts a copper wire connected to the 2.5-35mm^2,there are two kinds of wiring method.

(1)From the power supply switch wiring to the protector,and the protector line to the load side.This method is suitable for load disctribution box electric current below 100A.The use of wire section should beselectedaccording to the load current (see Figure 1)

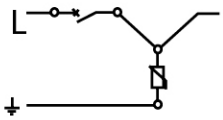


Figure 1

(2)From the power supply switch wiring to the protector,also from the line to load side power switch.This applies to the load current is more than 100A power disctribution box.

Connected to the protective conductor cross section is not affected by the load of electricity,But the length shall not exceed 500mm(see Figure2).

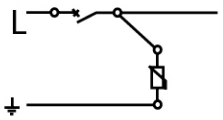
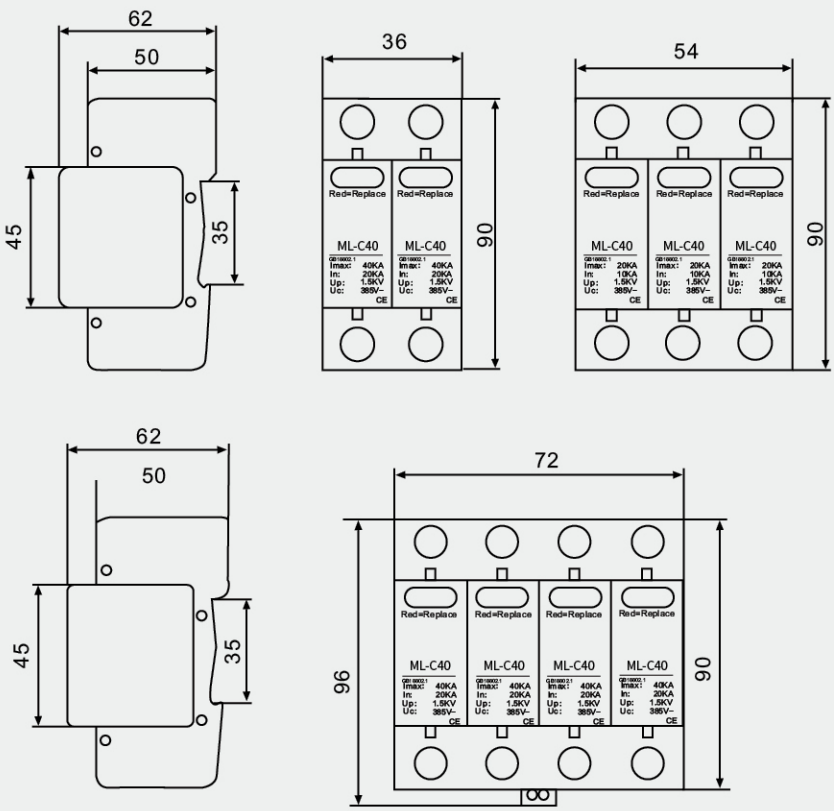


Figure 2

The grounding wire should be used more than 4mm^2 of dual color wire length,shall not exceed 500mm.

In order to prevent the surge protection device failure affects the normal operation of power grid,protection on the L line should string fuse are connected with a 25A.

Appearance and installation dimensions



MiLELE

ML-D20

Surge Protective Device

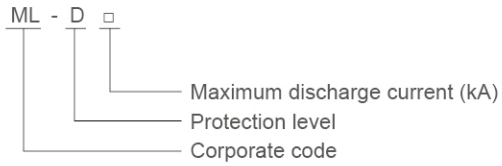
Surge protector series

www.chmldq.com / www.mlele.com

Purpose and scope

ML-D20 surge protection device (hereinafter referred to as the "protector") for AC 50/60 Hz, 400V and below the TN-S, TN-C, TN-C-S,TT, IT power supply system, the power grid caused by lightning or surge voltage protection.

Model and meaning



From the device failure

Module protector with failure from the device, when the protective device due to overheating, break-down failure, the failure disengagement device can automatically detach it from the power grid, also give an indication signal.

Protector normal signs shown in green, red label display failure detachment.

Technical Parameters

Index \ Model		ML-D20	ML-D20	ML-D20
Rated voltage of Un (V)		275V	385V	420V
Maximum continuous operating voltage Uc (~V)		275V	385V	420V
Voltage protection level of Up (kV)		1.4kV	1.4kV	1.6kV
Normal discharge current In (8/20μs) (kA)		10	10	10
Maximum discharge current of Imax (8/20 μs) (kA)		20	20	20
ns The response time of NS		< 25		
Test level		II Level		
width (mm)		18		
Color		yellow White Red		
Protection grade		IP20		
Shell material		Reinforced flame retardant PBT		
Environmental temperature		-40°C ~+85°C		
A fuse or circuit breaker (A)		20A		
The line Specifications	Phase line, zero line	2.5~35mm^2		
	Wire	4.0~35mm^2		
	The signal line	1.5mm^2		

The installation position and Application

Installed in the LPZ1 or LPZ2 area and LPZ3 area at the junction,protection class III .

Protective device using standard 35mm track installation.

Protector adopts a copper wire connected to the 2.5-35 mm^2,there are two kinds of wiring method.

(1)From the power supply switch wiring to the protector,and the protector line to the load side.This method is suitable for load disctribution box electric current below 100A.The use of wire section should beselectedaccording to the load current (see Figure 1)

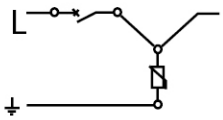


Figure 1

(2)From the power supply switch wiring to the protector,also from the line to load side power switch.This applies to the load current is more than 100A power disctribution box.

Connected to the protective conductor cross section is not affected by the load of electricity,But the length shall not exceed 500mm(see Figure2).

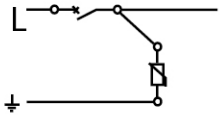
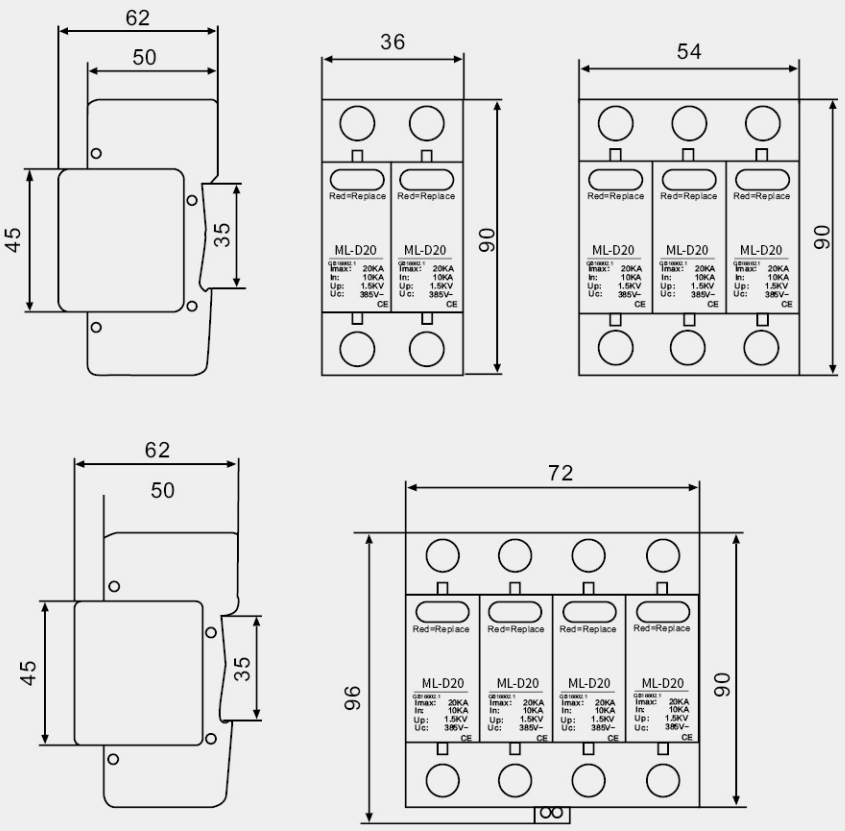


Figure 2

The grounding wire should be used more than 4mm^2 of dual color wire length,shall not exceed 500mm.

In order to prevent the surge protection device failure affects the normal operation of power grid,protection on the L line should string fuse are connected with a 20A.

Appearance and installation dimensions



MiLELE

ML-C40

Surge Protective Device

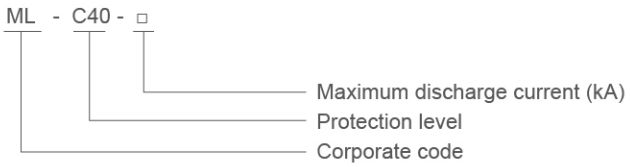
C Surge protector series

www.chmldq.com / www.mlele.com

Purpose and scope

ML-C40 surge protection device (hereinafter referred to as the "protector") for AC 50/60 Hz, 400V and below the TN-S□TN-C, TN-C-S,TT, IT power supply system, the power grid caused by lightning or surge voltage protection.

Model and meaning



From the device failure

Module protector with failure from the device, when the protective device due to overheating, break-down failure, the failure disengagement device can automatically detach it from the power grid, also give an indication signal.

Protector normal signs shown in green, red label display failure detachment.

Technical Parameters

Index \ Model		ML-C40	ML-C40	ML-C40
Rated voltage of Un (V)		275V	385V	420V
Maximum continuous operating voltage Uc (~V)		275V	385V	420V
Voltage protection level of Up (kV)		1.4kV	1.8kV	1.9kV
Normal discharge current In (8/20μs) (kA)		20	20	20
Maximum discharge current of Imax (8/20 μs) (kA)		40	40	40
ns The response time of NS		< 25		
Test level		II Level		
width (mm)		18		
Color		White Red		
Protection grade		IP20		
Shell material		Reinforced flame retardant PBT		
Environmental temperature		-40°C ~+85°C		
A fuse or circuit breaker (A)		20A		
The line Specifications	Phase line, zero line	2.5~35mm^2		
	W Wire	4.0~35mm^2		
	The signal line	1.5mm^2		

The installation position and Application

Installed in the LPZ1 or LPZ2 area and LPZ3 area at the junction,protection class II.

Protective device using standard 35mm track installation.

Protector adopts a copper wire connected to the 2.5-35mm^2,there are two kinds of wiring method.

(1)From the power supply switch wiring to the protector,and the protector line to the load side.This method is suitable for load disctribution box electric current below 100A.The use of wire section should beselectedaccording to the load current (see Figure 1)

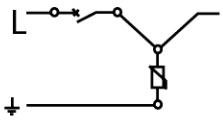


Figure 1

(2)From the power supply switch wiring to the protector,also from the line to load side power switch.This applies to the load current is more than 100A power disctribution box.

Connected to the protective conductor cross section is not affected by the load of electricity,But the length shall not exceed 500mm(see Figure 2).

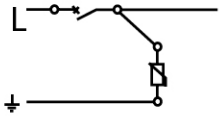
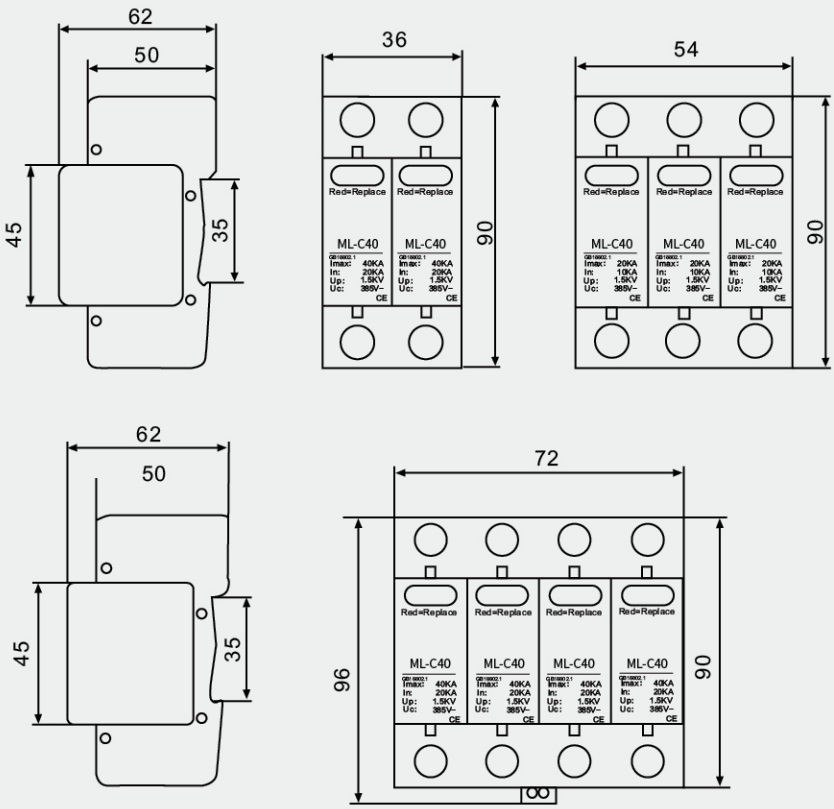


Figure 2

The grounding wire should be used more than 4mm^2 of dual color wire length,shall not exceed 500mm.

In order to prevent the surge protection device failure affects the normal operation of power grid,protection on the L line should string fuse are connected with a 25A.

Appearance and installation dimensions



MiLELE

ML-RH40T

Surge Protective Device

Surge protector series

www.chmldq.com / www.mlele.com

Overview

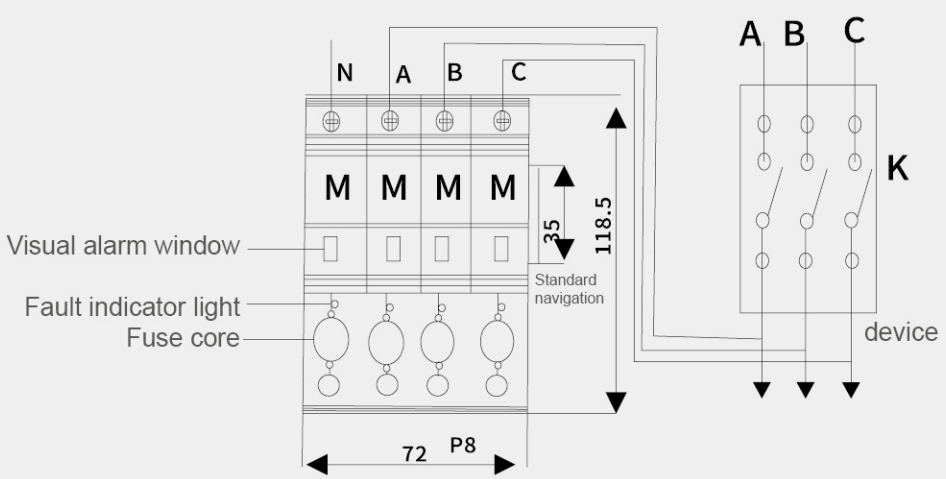
This product is dedicated to the AC low-voltage 385V system, the electrical culvert protection SPD device that causes overvoltage, overcurrent, and surge interference in the system due to induced lightning waves or other reasons to cause damage to the electrical equipment. The fuse combination series products will The short-circuit protection necessary for SPD is integrated in the SPD module. If a fuse + surge protector was originally required, after changing to a fuse combination series product, there is no need to configure a fuse.

Technical Parameters

1. Nominal voltage Un (AC): 220V
2. Maximum continuous voltage Uc (AC): 385V
3. Leakage current per channel II ≤20HA
4. Turn-on voltage VlmA (DC): 680v±10%
5. Discharge current In8/20us: ≤40KA Imax: 80 KA (8/20us)
6. Protection level Up (40KA): <2.4KV
7. Response time ta: <25ns
8. Insert the cross-sectional area of the phase wire S: 10<S<35mm² Insert the ground wire cross-sectional area S: 16<S<35mm²
9. Mode of maintaining characteristics: pressure-limiting type
10. Port mode: crimping terminal
11. Housing material: flame-retardant PC plastic
12. Working temperature T-40-+85°C
13. Plastic size: 72x118.5x72.8mm
14. An electric alarm terminal can be installed when the user needs it

Installation and maintenance

Wiring diagram



1. In the picture, M is the module (installed on the module frame) and mounted on a standard 35MM rail, K is the original power distribution cabinet main switch, the flow rate must be ≥32A, PE is the grounding terminal, and the wire ≤16mm² is connected to the cabinet for grounding On the row, the grounding resistance is less than or equal to 4Ω, and the visual alarm window is green when the module is normal, and red when it alarms.

2. Wiring method of electric alarm terminal: There is a small wiring terminal at the top of this product as the electric alarm signal output. When it is normal, the left pin (a) of the terminal is connected with the right pin (c), and the conduction signal is output, and the middle pin (b) is connected with the left pin. Pin (a) is not connected, and the output signal is broken. The opposite is true for alarms.

3. Maintenance: This device uses high-quality lightning protection components, and is tested once ayear in accordance with relevant national regulations. FC-2G lightning protection components are usedTester, test A, BC, N-PE, each V1mA is 680V±10%, leakage current <20μA, it is qualified, use digital meter to detect resistance value A, BCN-PE should be >20MΩ, it is qualified, when failure indicator light When the (red light) is on, the module and the fuse core must be replaced in time (except for the N pole) due to the aging of the module: the method is to rotate the screw under the indicator in the counterclockwise direction, replace the fuse core, and press the sequence Just screw in in the direction of time, the module is plug-in type, and the module can be replaced by pulling out. When replacing the fuse core, it is live work, please pay attention to safety!

Description

According to the data provided by the national standard GB/721714, 1-2008/IEC 62305-1: 2006 "Lightning Protection, Part 1: General Provisions", the expected value of lightning overcurrent surge in the application environment of this product will not exceed 5KA (8 /20us), under normal circumstances, the user can directly use the fuse tube that comes with the product, but if the user's use environment exceeds the range, the corresponding fuse needs to be selected separately.

Attached: GB/T21714.1-2008/1EC62305-1: 2006 "Lightning Protection Part 1 General Provisions" Table E2 Expected value of lightning overcurrent surge

	Low Pressure System	
LPL	Near lightning service facilities	Lightning strikes a building or its vicinity
	Damage source S4 (indirect lightning strike) waveform: 8/20usKA	Damage source S 1 or S2 (the induced current is only for S1) Waveform: 8/20usKA
III-IV	2.5	0.1
I-II	5	0.2

For shielded wires, the overcurrent values given in Table E.2 may be reduced by half

MLELE

ML-RH100T

Surge Protective Device

Surge protector series

www.chmldq.com / www.mlele.com

Overview

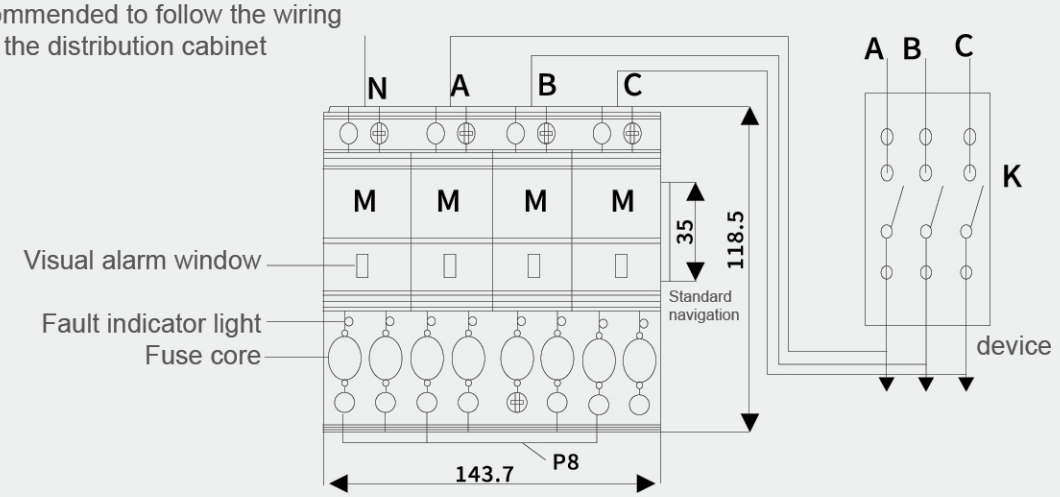
This product is dedicated to the AC low-voltage 385V system, the electrical culvert protection SPD device that causes overvoltage, overcurrent, and surge interference in the system due to induced lightning waves or other reasons to cause damage to the electrical equipment. The fuse combination series products will The short-circuit protection necessary for SPD is integrated in the SPD module. If a fuse + surge protector was originally required, after changing to a fuse combination series product, there is no need to configure a fuse.

Technical Parameters

1. Nominal voltage Un (AC): 220V
2. Maximum continuous voltage Uc (AC): 385V
3. Leakage current per channel IIe≤20μA
4. Conduction voltage VImA (DC): 680v±10%
5. Discharge current In8/20 us: <100KA Imax: 160KA (8/20us)Limp: 15kA (10/350 us)
6. Protection level Up (100KA): <25KV
7. Response time ta: <25ns
8. Ways to maintain characteristics: pressure-limiting type
9. Port mode: crimping terminal
10. Housing material: flame-retardant PC plastic
11. Working temperature T: -40-85°C
12. Dimensions: 144x118.5x72.8mm
13. An electric alarm terminal can be installed when the user needs it
14. Insert the cross-sectional area of the phase line S: 16<S<35mm²Insert the ground wire cross-sectional area S: 25<S<35mm²

Installation and maintenance

1. It is recommended to follow the wiring diagram in the distribution cabinet



1 The module in the picture is installed on a standard 35mm rail, K is the main switch of the original power distribution cabinet, the flow rate should be ≥50A, PE is the grounding terminal, connect to the grounding bar in the cabinet with a 25mm² wire, and the grounding resistance is less than 4Ω, visual alarm The window is green when the module is normal, and red when it alarms.

2. Wiring method of electric alarm terminal: There is a small wiring terminal at the top of the product as the electric alarm signal output. When it is normal, the left pin (a)Connect with the right needle (c) to output a conduction signal, while the middle needle (b) and the left needle (a) are not connected, and output a disconnection signal. The opposite is true for alarms.

3. Maintenance: This device uses high-quality lightning protection components and is tested once a year according to relevant national regulations. Use FC-26 lightning protection component tester to test ABCN-PE. V1 mA per channel is 680V±10%, leakage current ≤ 20μA is qualified, and the resistance value ABC and N-PE should be >20MΩ to be qualified with a digital meter. When the fault indicator (red light) is on, the module and the fuse core (except the N pole) must be replaced in time due to the aging of the module: the method is to unscrew the screw under the indicator in the counterclockwise direction and replace the fuse core. Then turn it in in the clockwise direction. The module is a plug-in type, and the module can be replaced by pulling out. When replacing the tower breaker core, it is live work. Please pay attention to safety!

Description

According to the data provided by the national standard GB/721714, 1-2008/IEC 62305-1: 2006 "Lightning Protection, Part 1: General Provisions", the expected value of lightning overcurrent surge in the application environment of this product will not exceed 5KA (8 /20us), under normal circumstances, the user can directly use the fuse tube that comes with the product, but if the user's use environment exceeds the range, the corresponding fuse needs to be selected separately.

Attached: GB/T21714.1-2008/1EC62305-1: 2006 "Lightning Protection Part 1 General Provisions" Table E2 Expected value of lightning overcurrent surge

	Low Pressure System	
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III-IV	2.5	0.1
I-II	5	0.2
For shielded wires, the overcurrent values given in Table E.2 may be reduced by half		

MiLELE

ML40

SPD Backup protector

Overview

In the low-voltage power supply system, the SPD backup protector is an external disconnector used in series with the surge protector. It is suitable for AC 50/60Hz, 230V-400V range TT, TN and other power supply systems.

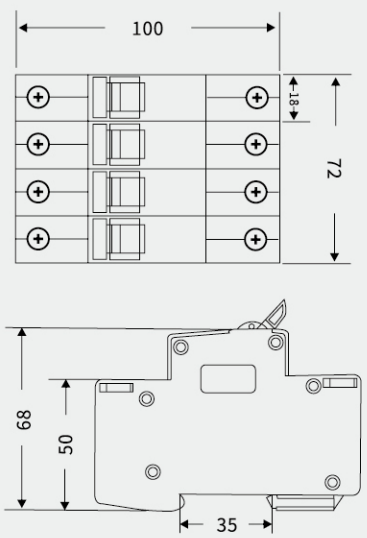
Product structure and performance characteristics

1. When a transient overvoltage occurs in the power line, the SPD is turned on and a melt-through short-circuit occurs, which will cause the power supply to trip and cause an accident. After installing the SPD backup protector, the SPD can quickly disconnect the circuit when a transient overvoltage short-circuit occurs in the SPD to avoid accidents caused by SPD melt-through.
2. When the lightning current passes, the SPD backup protector can effectively avoid false tripping, so that the surge protector is always in an effective state and guarantees the safety of electricity.

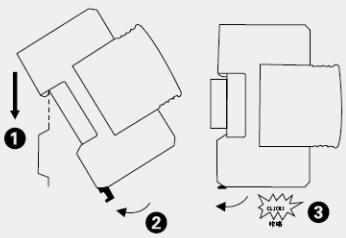
Technical Parameters

Product number	SPD15	SPD20	SPD40	SPD60	SPD80	SPD100	SPD120
Experiment category	T1	T2					
Rated working voltage Ue	230/400VAC						
Maximum impulse current Limp (10-350μs)	15kA	-	-	-	-	-	-
Maximum discharge current Imax (8/20μs)	-	20kA	40kA	60kA	80kA	100kA	120kA
Nominal discharge current In	15kA	10kA	20kA	30kA	40kA	50kA	60kA
Matched SPD	15kA	20kA	40kA	60kA	80kA	100kA	120kA
Working frequency	50/60Hz						
Power frequency short circuit current breaking capacity Isc	50kA	15kA	25kA	25kA	50kA	50kA	50kA
Power frequency short circuit current	3A						
Power frequency breaking time	0.3s						
Power frequency current breaking times	1000 Times						
Remote indication	Can install LOF attachments						
Number of poles	1P；2P；3P：4P						
Ip protection level	IP20						
Maximum wiring	25 mm²						
Operating temperature	-25℃ ~60℃						
storage temperature	-40℃ ~75℃						

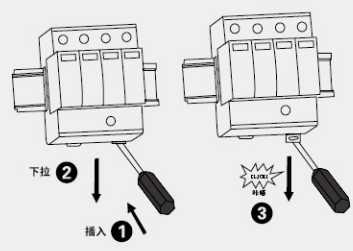
Dimensions



Installation diagram



Disassembly diagram



MLELE

MW45

Air Circuit Breaker

Universal Circuit Breaker Series

www.chmldq.com / www.mlele.com

Application

MW45 series air circuit breaker (hereinafter referred to as breaker) is suitable for the circuit of AC 50/60Hz with rated voltage 400V, 690V and rated current up to 6300A .It is mainly used to distribute electric energy and protect circuit and power supply equipment from overload under-voltage short-circuit, and single-phase earthing .With intelligent and selective protection functions, the breaker can improve the reliability of power supply, and avoid unnecessary power failure.The breaker is applicable for power stations, factories , mines(for 690V) and modern high-building, especially for the distribution system of intelligent building.

The breaker conforms to IEC60947-2. The whole series have past CCC certification and CE certification.

Working Condition

- Temperature condition: -5°C~+40°C ;the average value within 24h not exceed+35°C
- Elevation: altitude of installation place shall not exceed 2000m.
- Atmosphere condition: relative humidity at +40°C shall not exceed 50%. Higher humidity is permissible at lower temperature condition. When the higher monthly average relative humidity is 90% in the humiddest month , the lowest monthly average temperature of this month is +25°C .And consider the influence of dew on product surface due to temperature changes.
- Pollution grade: grade III.
- The breaker should be installed according to the requirement on the instruction manual: the vertical inclination degree shall not exceed 5°.

Specification

Type		MW45-2000	MW45-3200	MW45-4000	MW45-6300
Frame rated current Inm(A)		2000	3200	4000	6300
Number of poles		3,4	3,4	3,4	3,4
Rated current In (A)		630,800,1000, 1250,1600,2000	2000,2500,3200	2000,2500,3200,4000	4000,5000,6300
Icu (kA)	400V	80	100	100	120
	690V	50	65	65	80
Ics=Icw (kA)	400V	50	80	80	100
	690V	40	50	50	65
Rated current at N-pole In(A)		50%In,100%In			
Inherent making & breaking time		23-32ms			
Operational performance (operations)	Electric life	500			
	Mechanical life	Maintenance-free 2500 Maintenance 10000			
Mounting mode		Fixed / Withdrawable			
Arcing distance(mm)		0			
Intelligent controller		Standard type(M) Telecommunication type (H)			

Intelligent Controller

Intelligent controller is one of the core components of the circuit breaker

Properties of the intelligent controller

a.Protective function of over-load long time-delay and inverse time limit, short time-delay and inverse time limit, short time-delay definite time limit instantaneous operation protection;
b.Single-phase earthing failure protection;
c.Display of setting current Ir and operational current;
d.Ampere meter;
e.Over-load alarm;
f.Short-circuit alarm
g.Testing of operational properties
Note:The breakers with telecommunication port are available to realize remote control to breaker through master computer.

Protection performances of over-current release

a. Ir and its inaccuracy of the controller

Inm(A)	Long time-delay		Short time-delay		Instantaneous		Earthing failure	
	Ir1	Error	Ir2	Error	Ir3	Error	Ir4	Error
≥2000	(0.4~1)In	±10%	(0.4~15)In	±10%	1.0In~15kA	±15%	Inm≤4000A(0.2-0.8)In (Max.1200A.Min.200A) Inm≤6300A(0.2-1.0)In	±10%

Note:1.When the breaker could realize over-load with long time delay.short-circuit with short time-delay and short-circuit instantaneous protections, the setting ratings can not be over-lapped,and Ir1 < Ir2 < Ir3
2. When the frame is 3200A and above ,the setting ratings range from 1.01In to 75kA.

b.Characteristics of long time-delay protection

1.05 Ir1	1.3 Ir1	1.5 Ir1	2.0 Ir1
>2h Non-tripping	<1h Tripping	15s,30s,60s,120s,240s,480s	8.4s,16.9s,33.7s,67.5s,135s,270s

c.Characteristics of short time-delay protection

For low over-current,inverse time-limit protection could be realized;when the over-current is >8Ir1,it will automatically change to be definite time-limit protection properties.

Refer to table below for time-limit properties.

Setting delay time (s)	Returnable time(s)
0.1,0.2,0.3,0.4	0.06,0.14,0.23,0.35

Standard Composition

To facilitate your ordering and utilization, the MW45 intelligent with basic electric accessories as follows.

Standard composition of the breaker	Fixed type	Withdrawable type
Body	■	■
Drawer base	■	■
Intelligent controller	■	■
Electric motor	■	■
Closing electro-magnet	■	■
Shunt release	■	■
Under-voltage	■	■
Auxiliary contact	■	■
Door frame	■	■

Accessories

Shunt release

a.Shunt release is for remote breaking of circuit breaker so as to enhance security of the operator;

b.Ratings of shunt release

Rated operational voltage(V)	AC220V	AC380V	DC110V	DC220V
Operational voltage range	(70%~110%)Ue			
Power consumption	24VA	24VA		40W

Under-voltage release

a. It is an optional accessory;

b. Mainly used to protect apparatus from damage due to lowering of the operational voltage to a certain value;

c. Two types of release are available: instantaneous release and time-delay release;

d. For breakers appended with the release, it should be electrified continuously;

e. Ratings of under-voltage release;

f. Operation properties of under-voltage release.

Rated operational voltage(V)	AC220V	AC380V	DC110V	DC220V
Operational voltage range	(35%~110%)Us			
Power consumption	24VA	24VA		40W

Category		Under-voltage time-delay release	Under-voltage instantaneous release
Operation time of the release		Time-delay:1s,3s,5s	Instantaneous
Operational voltage of the release	35%Us ~70%Us	Break the breaker	Break the breaker
	≤35%Us	Can not make the breaker	Can not make the breaker
	≥85%Us~110%Us	Reliably make the breaker	Reliably make the breaker
Within 1/2 delay time, voltage of power supply recovers to 85%Us		Can not trip the breaker	

Note: Error the time of time-delay is ±10%

Closing electro-magnet

a. The magent is for remote making of circuit breaker so as to enhance security of the operator.

b. The mangent could not be electrified for a long time.

c. Ratings of the magnet.

Rated operational voltage(V)	AC220V	AC380V	DC110V	DC220V
Operational voltage range	(85%~110%)Ue			
Power consumption	40VA	40VA		40W

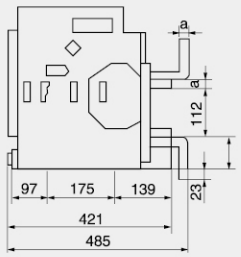
Auxiliary contact

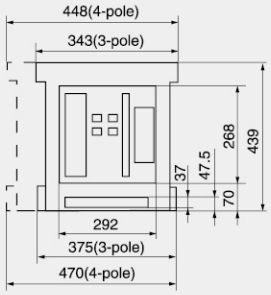
a. Conventional heating current of auxiliary contact: 6A

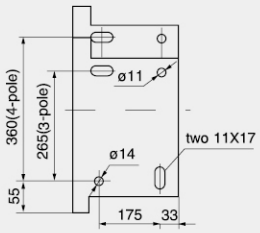
b. Auxiliary contacts: 4NO+4NC, 3NO+NC, 5NO+5NC(customization)

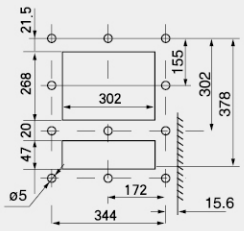
Outline and Installation Dimensions(mm)

MW45-2000 Drawer-type

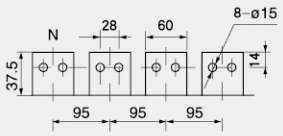






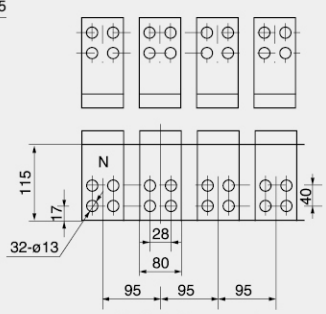


Opening hole on panel



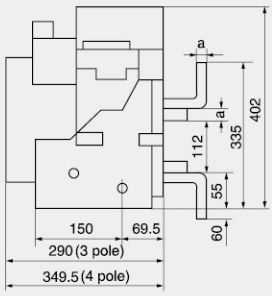
Horizontal Wire-connection

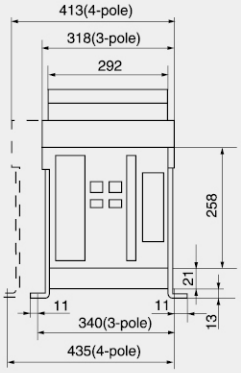
In(A)	a(mm)
630	10
800~1600	15
2000	20



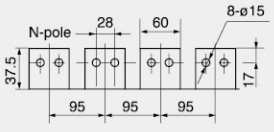
Vertical wire-connection

MW45-2000 Fixed type

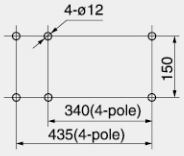




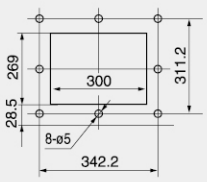
In(A)	a(mm)
630	10
800~1600	15
2000	20



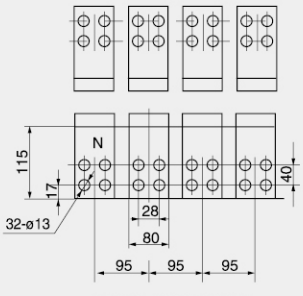
Horizontal Wire-connection



Installation hole on
flight & outer side



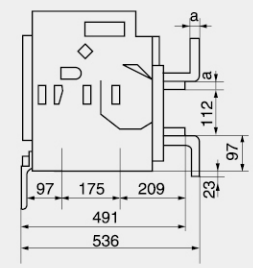
Opening hole on panel

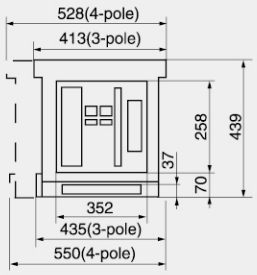


Vertical wire-connection

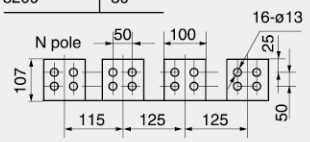
Outline and Installation Dimensions(mm)

MW45-3200 Drawer type

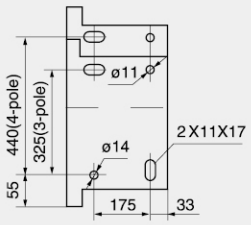


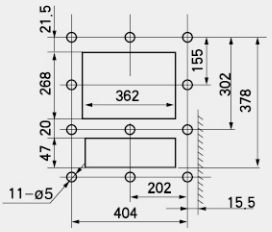


In(A)	a(mm)
2000-2500	20
3200	30

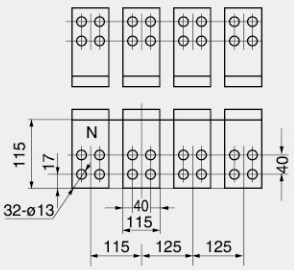


Horizontal Wire-connection



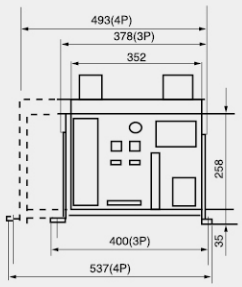


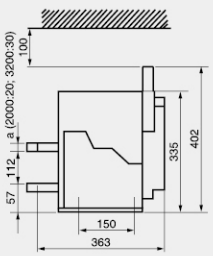
Opening hole on panel

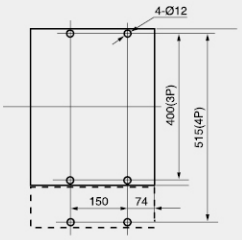


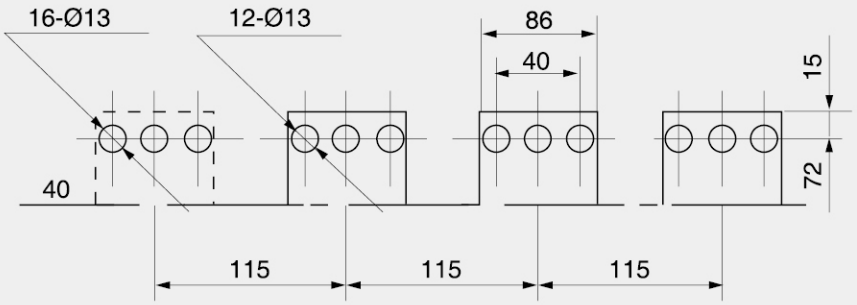
Vertical wire-connection

MW45-3200 Fixed type



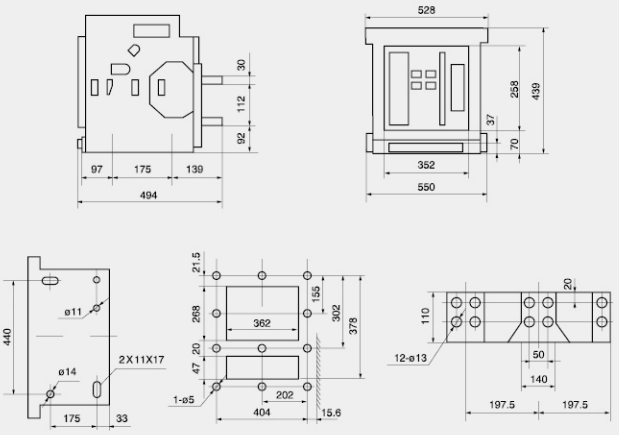




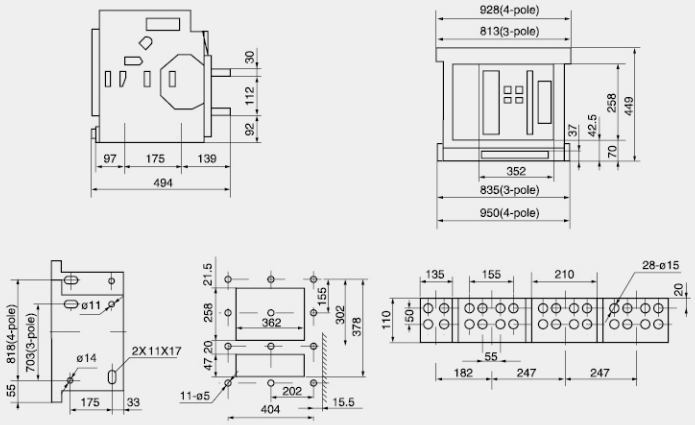


Outline and Installation Dimensions(mm)

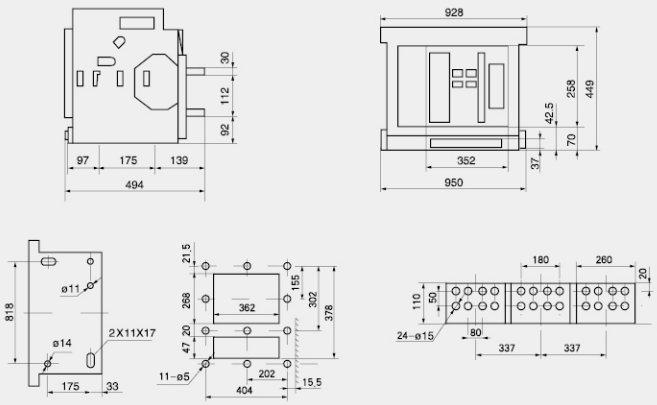
MW45-4000 Drawer type (3-pole)



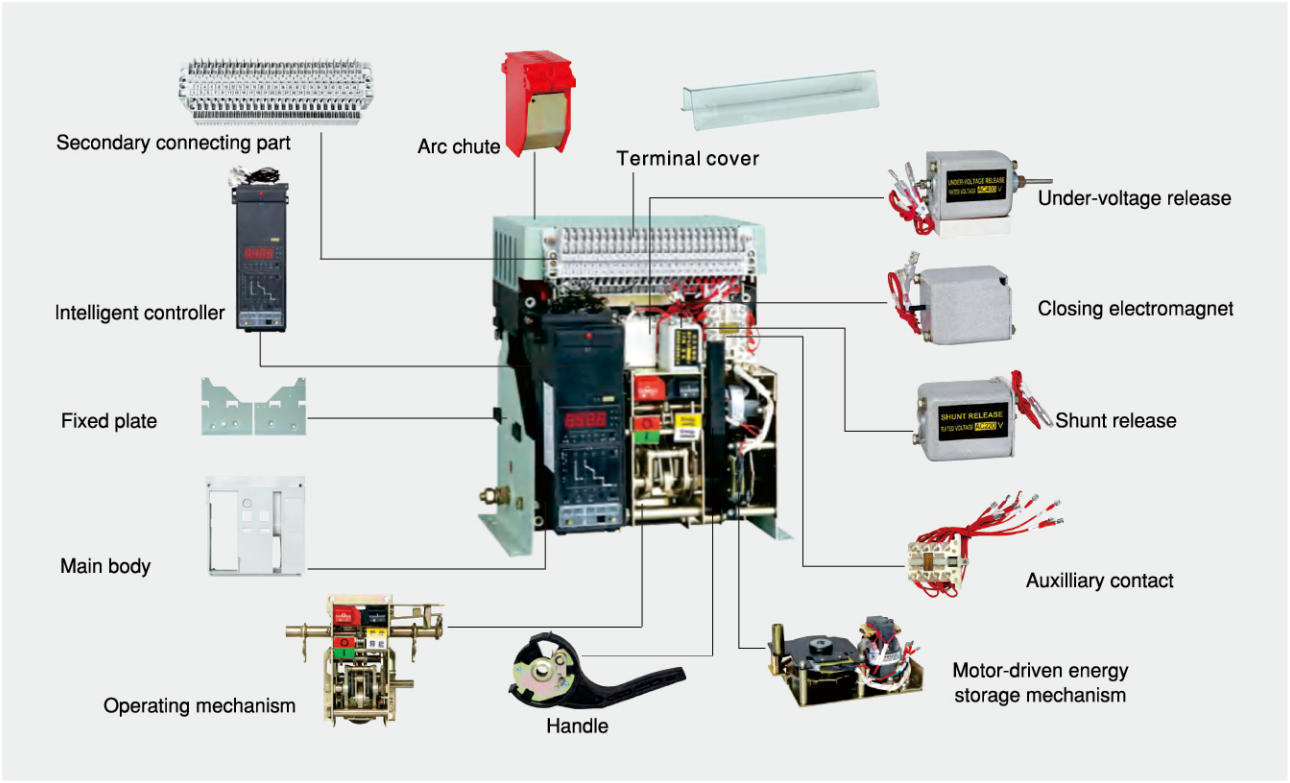
MW45-4000,5000 Drawer-type



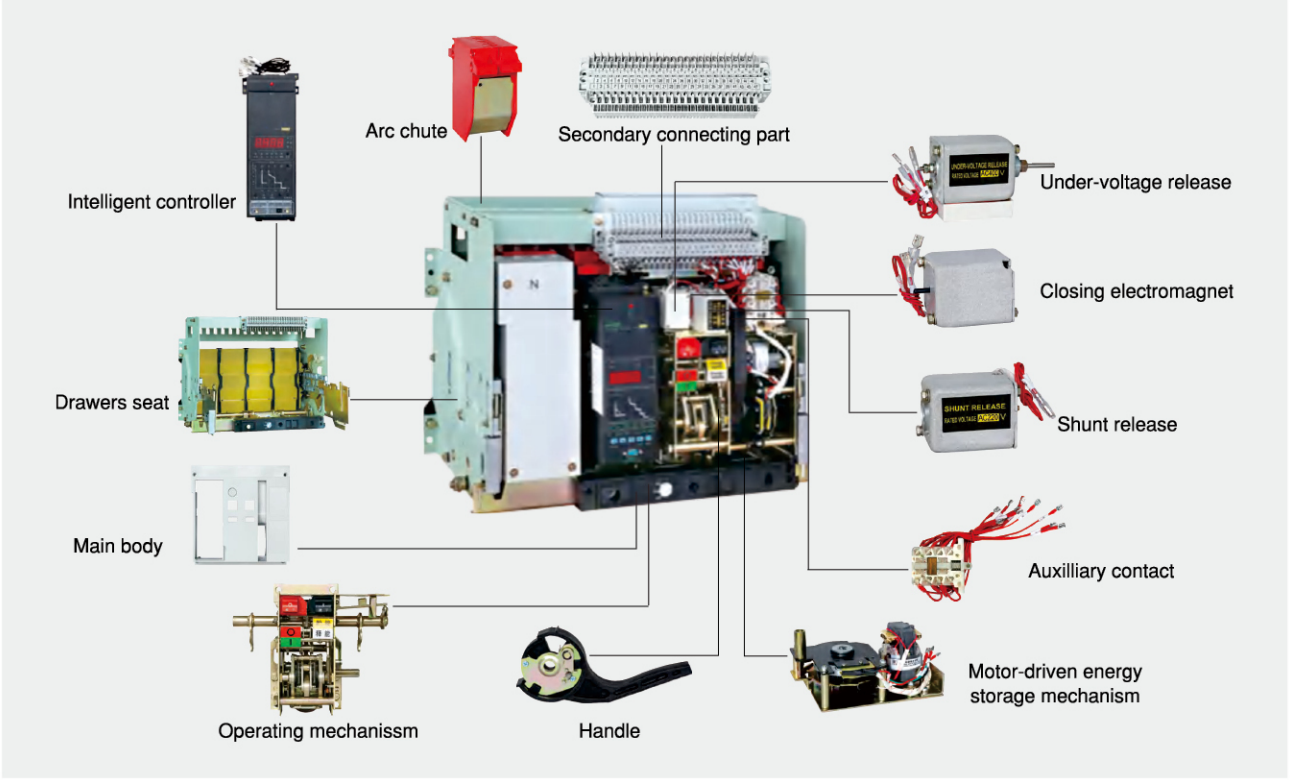
MW45-6300 Drawer type (3-pole)



Fixed Type Structure Explosion



Drawer Type Structure Explosion



MLELE

MM1

Moulded Case Circuit Breaker

Molded case circuit breaker series

Application

MM1 series moulded case circuit breaker is one of products developed and manufactured by adopting international advanced technology. It is supplied with rated insulating voltage 500 and 800V and used for the circuit of AC 50/60Hz, rated operating voltage AC 400V (or below), rated operating current up to 1600A for infreguently changing over and starting of the motors. The products conforms to IEC60947-2 standard.

Main Technical Specification

Table 1

Type	Rated current(A)	Pole	Rated insulating voltage(V)	Rated operating voltage(V)	Arcingover distance (mm)	Ultimate short circuit breaking capacity (kA)	Service short circuit breaking capacity (kA)	Operation performance		Utilization category
								Load	Unload	
MM1-63L	(6),10,16,20,25, 32,40,50,63	3,4	500V	400V	0	25	18	1500	8500	A
MM1-63M					0	50	35			
MM1-125L	(10),16,20,25,32, 40,50,63,80,100,125	1,2 3,4	800V		0(≤50)	35	22			
MM1-125M					0(≤50)	50	35			
MM1-250L	125,150,160,175, 180,200,225,250				≤50	35	22	1000	7000	
MM1-250M					≤50	50	35			
MM1-400L	225,250,315,350,400	1,3 4			≤50	50	35	1000	4000	
MM1-400M					≤100	65	42			
MM1-630L	400,500,600				≤100	50	35			
MM1-630M					≤100	65	42			
MM1-800M	630,700,800	3,4			≤100	75	50			
MM1-1250M	1000,1250				≤100	100	65			
MM1-1600M	1600				≤100	150	80			

Note: 6A without thermal protection

The N-pole of four-poles breaker is sited at the right side of the product has four types:

Type A: Without current trip-release on N pole which making all the time, not closing and opening with the other three poles.

Type B: Without current trip-release on N pole which closing and opening with the other poles.

Type C: With current trip-release which closing and opening with the other three poles.

Type D: With current trip release which making all the time not closing and opening with the other three poles.

Protection Characteristic

The thermodynamic release of a circuit breaker provides the feature of inverse time-delay, while the magnetic release is the instantaneous operation as shown on table 2(distribution circuit breaker) and table 3(motor protection circuit breaker).

Table 2

Rated current of release (A)	Thermodynamic release(ambient temperature land +40°C marine +45°C)		Operating current of magnetic release(A)
	1.05In(cold state) Inoperative time(h)	1.30In(heat state) Operative time(h)	
10≤In≤63	≥1	＜1	10In±20%
63 ＜ In≤100	≥2	＜2	5In±20% 10In±20%
100 ＜ In≤800	≥2	＜2	

Table 3

Rated current of release (A)	Thermodynamic release(ambient temperature land +40°C marine +45°C)				Operating current of magnetic release(A)
	1.0In(cold state) non-trip time(h)	1.20In(heat state) trip time(h)	1.50In(heat state) trip time(m)	7.2In(cold state) trip time(s)	
10≤In≤250	≥2	＜2	≤4	4＜t≤10	12In±20%
250＜In≤630			≤8	6＜t≤20	

Back panel connection

Plug-in connection

Electromagnetic operation device

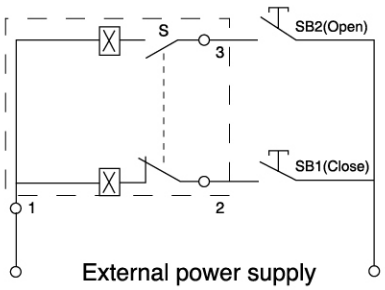
Motor-driven operation device

Accessories of Circuit Breaker

The external accessories of the breaker

Electromagnetic operation device and Motor-driven operation device

1) Wiring diagram of type CDM electromagnetic operation device(fitting MM1-63,100,250) see the following drawing (wiring diagram of the external accessories of the breaker in the dotted frame)

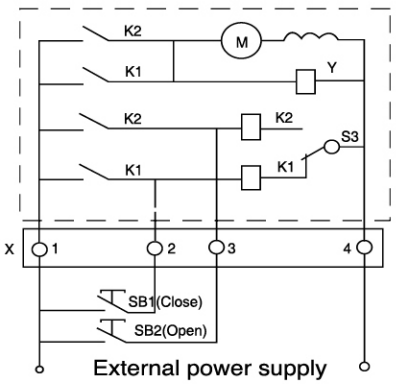


Code description:SB1,SB2 stand for push button.(provided by users themselves)

Number“1”,“2”,“3”stand for number of wiring terminals.

Voltage rating:AC50/60Hz 230V 400V, DC 220V

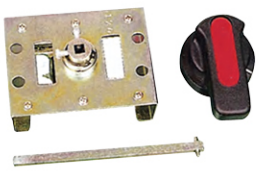
2) Wiring diagram of type CD Electromagnetic operation device and motor-driven operation device (fitting MM1-400、630、800) see belows (wiring diagram of the external accessories of the breaker in the dotted frame)



Code description: SB1,SB2 stand for push button. (provided by users themselves)

“X”stands for line connection terminals

Voltage rating:AC50/60Hz 230V 400V, DC220V

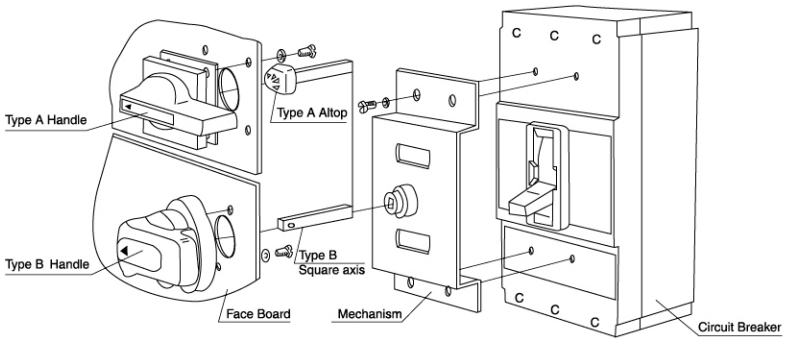


Rotary handle operation device

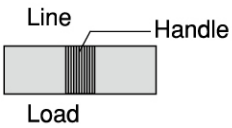
Rotary handle operation device

The mechanism is used with moulded case circuit breaker to operate the draw-out panel. Power distribution panel and supply box outside the panel by turning the handle ,and to ensure the door of panel would not be openned when the breaker being on.

The hand-drive mechanism can be equiped with two types of operation, one is “A” model square handle , the other is “B” model round handle.



Release pattern and accessories code



UVR: Under-voltage release SHT: Shunt release
AL: Alarm contact AX: Auxiliary contact

Release pattern and accessories code	Name / Type	MM1-63,100,250	MM1-400	MM1-630	MM1-800
200,300	Without accessories	200:magnetic release (only short circuit protection 300: thermal magnetic release(both overload and short circuit protection)			
208,308	Alarm contact	AL	AL	AL	AL
210,310	Shunt release	SHT	SHT	SHT	SHT
220,320	Auxiliary contact	AX	AX	AX	AX
230,330	Under-voltage release	UVR	UVR	UVR	UVR
240,340	Shunt release,Auxiliary contact	SHT AX	SHT AX	SHT AX	AX SHT
250,350	Shunt release, Under-voltage release	SHT UVR	SHT UVR	SHT UVR	UVR SHT
260,360	Two group of auxiliary contact	AX AX	AX AX	AX AX	AX AX
270,370	Under-voltage release, Auxiliary contact	AX UVR	AX UVR	AX UVR	UVR AX
218,318	Shunt release,Alarm contact	AL SHT	SHT AL	AL SHT	AL SHT
228,328	Alarm contact,Auxiliary contact	AL AX	AL AX	AL AX	AL AX
238,338	Under-voltage release, Alarm contact	AL UVR	AL UVR	AL UVR	AL UVR
248,348	Shunt release, Alarm contact,Auxiliary contact	AL AX SHT	SHT AL AX	AL AX SHT	AL AX SHT
268,368	Two group of auxiliary contact, Alarm contact	AL AX AX	AL AX AX	AL AX AX	AL AX AX
278,378	Shunt release, Alarm contact, Under-voltage release	SHT AL UVR	AL UVR SHT	AL UVR SHT	SHT AL UVR

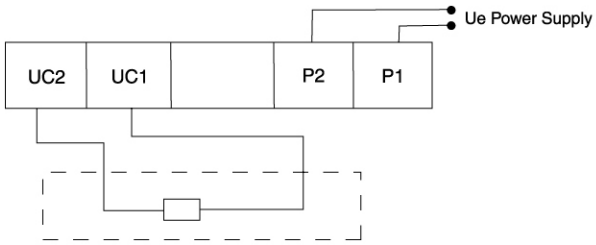
Under-voltage release

According to user's demands, accessories could lead to direct wire outcoming or line wiring terminals could be added(please mark out in case of placing order).

Under-voltage release

Wring diagram of the under-voltage release connected externally (the internal accessories in the dotted frame)

Ue:AC230V,400V

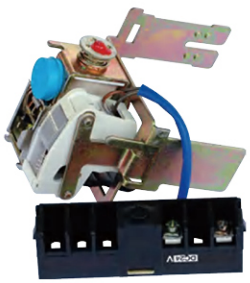


When the operation voltage is 35%~70% of the rated voltage, the under-voltage release should make the breaker trip correctly.

When the operation voltage is 85%~110% of the rated voltage, the under-voltage release should make the breaker close.

In case of the operation voltage less than 35% of the rated voltage, the under-voltage should prevent the breaker from closing.

Note: Only the under-voltage release should be energized in advance, the breaker could be recramped and turned-on, otherwise the breaker will be damaged.

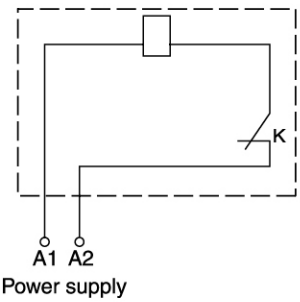


Shunt release

Shunt release

Wring diagram of the shunt release (the internal accessories in the dotted frame)"K" is the slow motion switch normal-close conntact connect the coil in series in the shunt release.

It turns-on or turns-off automatically as soon as the breaker on or off.



Alarm contact

Voltage rating:AC230V 400V, DC 110V 220V

The shunt release should make the breaker trip reliably when the operation voltage is 70%~110% of the rated control voltage.

Alarm contact

The position of the breaker in "off" or "on	
The position of the breaker in "free trip"(alarm)	B11and B12 switch from"close"to"open",status of B11 and B14 switch from"open" to"close

Auxiliary Contact

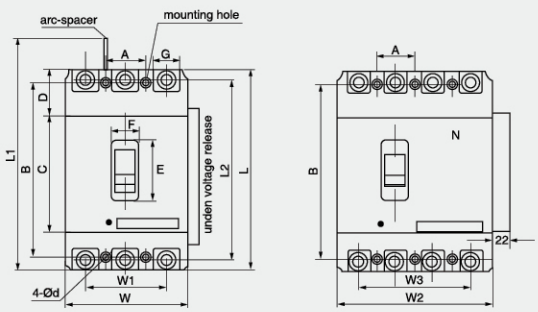
Auxiliary Contact

When the breaker is in“off”	F14, F12, F11; F24, F22, F21	For the breaker with frame current 400A and above
	F14, F12, F11	For the breaker with frame current 250A and below
When the breaker is in“on”	When the breaker is in “off”, the contacts switch from “close” to “open” When the breaker is in “off”, the contacts switch from “open”to“close”	

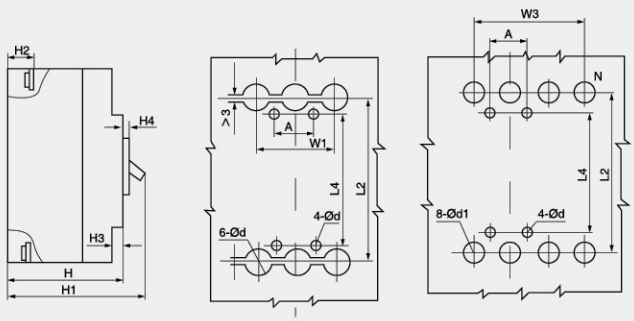
Outline and Installation Dimensions(mm)

Type	Outline Dimensions(mm)																													Installation Dimensions		
	Front panel connection																Back panel connection					Plug-in connection											
	W	W1	L	L1	L2	H	H1	H2	H3	H4	C	D	E	F	G	W2	W3	L4	H5	H6	φD	φD1	L5	L6	H7	H8	H9	H10	J	K	φd1	M	A	B	φd
MM1-63L	76	50	135	170	117	74	92	20	7	4	85	28.5	48	22	14	100	75	117	44	66	8	8							60.7				25	117	3.5
MM1-63M	76	50	135	170	117	82	98.5	28	7	4	85	28.5	48	22	14	100	75	117	44	66	8	8							62				25	117	3.5
MM1-100L	92	60	150	185	132	68	86	24	7	4	88	35.5	50	22	17.5	122	90	129	68	108	26	16	92	168	50	62	74	17.5	56	60	6.5	M8	30	129	4.5
MM1-100M	92	60	150	185	132	86	104	24	7	4	88	35.5	50	22	17.5	122	90	129	68	108	26	16	92	168	50	62	74	17.5	56	60	6.5	M8	30	129	4.5
MM1-250L	107	70	165	215	144	86	110	24	5	4	102	31.5	50	22	17	142	105	126	66	110	20	20	94	183	50	69.5	84.5	17.5	54	70	6.5	M8	35	126	5
MM1-250M	107	70	165	215	144	103	127	24	5	4	102	31.5	50	22	17	142	105	126	66	110	20	20	94	183	50	69.5	84.5	17.5	54	70	6.5	M8	35	126	5
MM1-400L	182	116	270	370	234	110	160	43	8	6	134	70	89	65	φ29	198	144	200	65	125	36	36	169	299	60	92	110	21	123	100	8.5	M12	58	200	7
MM1-400M	182	116	270	370	234	110	160	43	8	6	134	70	89	65	φ29	198	144	200	65	125	36	36	169	299	60	92	110	21	123	100	8.5	M12	58	200	7
MM1-630L	182	116	270	370	234	110	160	43	8	6	134	70	89	65	φ29	240	174	200	65	125	36	36	169	299	60	92	110	21	123	100	8.5	M12	58	200	7
MM1-630M	182	116	270	370	234	110	160	43	8	6	134	70	89	65	φ29	240	174	200	65	125	36	36	169	299	60	92	110	21	123	100	8.5	M12	58	200	7
MM1-800M	210	140	280	380	234	106	145	33	8	128									128														70	243	7.2
MM1-1250M	210	140	393			200			30																										
MM1-1600M	210	140	393			200																													

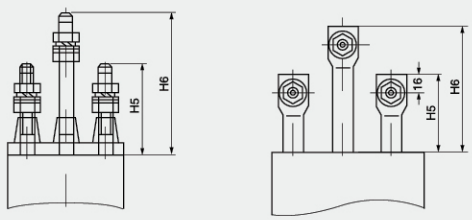
Front panel connection



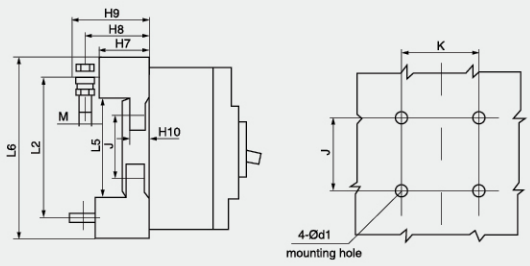
Back panel connection



Back panel connection



Plug-in connection



MLELE

MM1E

Moulded Case Circuit Breaker

Molded case circuit breaker series

www.chmldq.com / www.mlele.com

Application

MM1E series intelligent moulded case circuit breaker is developed and manufactured by adopting interational advanced technology. It is supplied with rated insulating voltage 800V and used for circuit of AC 50/60Hz, rated operating voltage 400V, rated operating current up to 800A of the circuit breaker infrequent changing over and starting of the motors. The circuit beaker has protection function of overload long delay inverse time, short circuit short delay time limit, short circuit instantaneous and under voltage, which can protect the line and power supply equipment from damage.

The circuit breaker can be mounted vertically(i.e. vertical) or horizontally. The Circuit breaker can not be poured into the line, that is, only 1,3,5 connect power cord;2,4,6 connect load line.

The circuit breaker conforms to following standards:

IEC60947-1 GBIT14018.1 low-voltage switchgear and control equipment Part I: General

IEC60947-2 GB14048.2 low-voltage switchgear and control equipment, the second part of circuit breaker and annex with electronic over-current protection circuit breaker additional reauirement;

IEC60947-4 GB14048.4 low-voltage switchgear and control equipment contactors and motor starts;

IEC60947-5.1 GB14048.5 low-voltage switchaear and control eguipment electromechanical control circuit electrical appliances.

GB22710 electronic controller for low voltage circuit breaker.

Main Performance characteristics

MM1E intelligent moulded case circuit breaker is belongs to B category with three grades protection, In the short-circuit conditions, MM1E has a fully selective cooperation with some other shortcircuit protection devices in the same circuit.

With five tripping feature options. The users can adjust & set the tripping current according to the load current requirements

The energy of electronic release is provided by the circuit breaker itself. The current signal and the control source are from the toroidal current transformer which is installed in the circuit breaker.

With warning indication: When the load current exceeds the preset current, the LED on the circuit breaker cover indicates yellow;

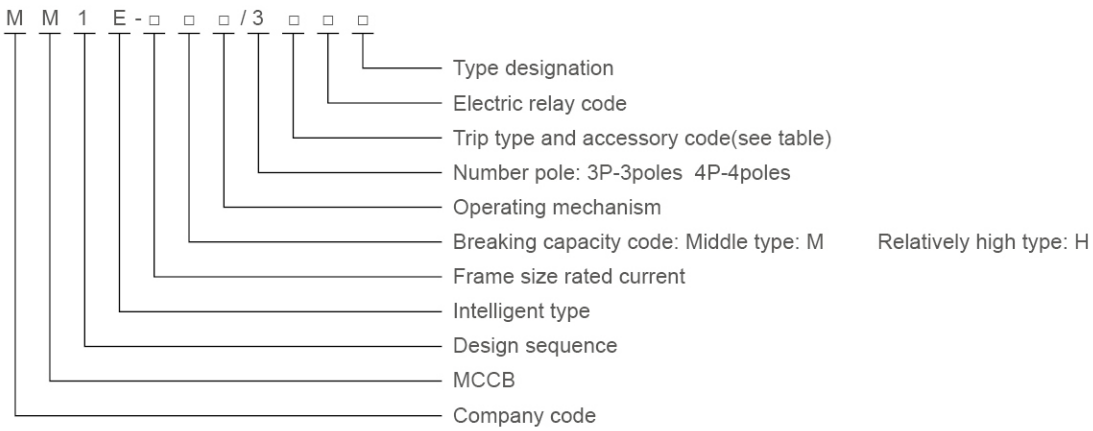
With overload indication: When the load current exceeds the set current, the LED on the circuit breaker cover indicates red;

With a dedicated fire overload no-trip only alarm function. When the load current overload operation, the circuit breaker does not trip, outputs a passive contact, drive the corresponding alarm device;

Compliance with IEC60947 Appendix F of the electromagnetic compatibility requirements;

Dimensions are same to the same frame MM1 molded case circuit breaker, installation is interchangeable.

Type and Meaning



Note:

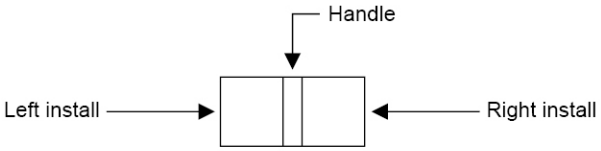
1.Distribution without code, protection motor code: 2;

2.Electronic accessories are: 1 communication module, 11 communication with shunt.111 communication with passive auxiliary contacts,IV overload alarm does not trip module, no electronic components code;

3.According to the number of poles of the product is divided into three poles and four poles,4 poles N type: N pole over load current protection, time parameter 100% automatic tracking phase line setting value, and N pole and other three poles ON-OFF Together (N pole turn off after close);

4.Directly operation without code, motor operation: P indicate, turn handle: Z indicate.

Main Technical Performance of Circuit Breaker



▲ Under-voltage release
■ Shunt realese
● Alarm contact
○ Two group of auxiliary contact
→ Leading wire

Table 1

Type		MM1E-125		MM1E-250		MM1E-400		MM1E-800	
Accessories code	Name / Pole	3	4	3	4	3	4	3	4
308	Alarm contact	←●□□		←●□□		←●□□		←●□□	
310	Shunt realese	←■□□		←■□□		←■□□		←■□□	
320	Auxiliary contact	←○□□		←○□□		←○□□		←○□□	
330	Under-voltage release	←▲□□		←▲□□		←▲□□		←▲□□	
340	Shunt realese,Auxiliary contact		←■□○→		←■□○→		←■□○→		←■□○→
350	Shunt realese, Under-voltage release	-		-		-		←■▲→	
360	Two group of auxiliary contact	←○□○→		←○□○→		←○□○→		←○□○→	
370	Auxiliary contact, Under-voltage release	←▲□○→		←▲□○→		←▲□○→		←▲□○→	
318	Shunt realese,Alarm contact	-		-		-		←●□■→	
328	Auxiliary contact,Alarm contact	←●□○→		←●□○→		←●□○→		←●□○→	
338	Under-voltage release, Alarm contact	-		-		-		←▲□●→	
348	Shunt realese, Auxiliary contact,Alarm contact	-		-		-		←◉□■→	
368	Two group of auxiliary contact, Alarm contact	←◉□○→		←◉□○→		←◉□○→		←◉□○→	
378	Auxiliary contact, Under-voltage release, Alarm contact	-		-		-		←◉□○→	

Note:

a. Release and internal accessories code first number 3 with hree section protection electronic release. After the two digit indicate the internal attachment code. No internal acessony attachments with 00.

b. 348 specifications of MM1E -800 auxiliary contact for a pair of contacts (i.e.,1 NO and 1 NC).368 specifications auxiliary contact three pairs of contacts(3NO and 3NC).

c. 4P product with N form is only separable type.

Capacity Loss and Coefficient Ratio

Capacity loss

Table 2

Type	Charging current	Total power loss for three phases	
		Front-panel board or back panel board connection	Plug-in connection
MM1E-125	125	35	
MM1E-250	250	62	40
MM1E-400	400	115	70
MM1E-800	800	262	210

Coefficient ratio due to environment temperature factor

Table 3

Type \ Environment temperature factor	+40°C	+45°C	+50°C	+55°C	+60°C
	Coefficient ratio	Coefficient ratio	Coefficient ratio	Coefficient ratio	Coefficient ratio
MM1E-125	1In	0.95In	0.89In	0.84In	0.76In
MM1E-250	1In	0.96In	0.91In	0.87In	0.82In
MM1E-400	1In	0.94In	0.87In	0.81In	0.73In
MM1E-800	1In	0.88In	0.83In	0.79In	0.76In

Main Technical Specifications

Table 4

Type		MM1E-125		MM1E-250		MM1E-400		MM1E-800	
Frame current(InmA)		125		250		400		800	
Breaking capacity		M	H	M	H	M	H	M	H
Rated current		32A(16,20,25,32) 125A(40,50,60,70,80,90,100,125)		100,125,140,160 180,200,225,250		200,225,250,280 315,350,400		630,640,660,680 700,720,740,760 780,800	
Pole		3,4		3,4		3,4		3,4	
Rated insulating voltage		AC690V							
Rated operating voltage		AC400V							
Rated impulse withstanding voltage		6000V		8000V		8000V		8000V	
Rated frequency		50Hz							
Flashover distance	Top-down	≤50		≤50		≤80		≤80	
	Left-right	0		0		0		0	
	Front-back	0		0		0		0	
Using category		A		B		B		B	
Rated limiting short-circuit breaking capacity		50	65	50	70	65	85	65	85
Rated service short-circuit breaking capacity		35	50	35	50	42	65	42	65
Rated withstand short-circuit current		1.5	1.5	5	5	8	8	10	10
Operating lift(time)	Elctrical	1500		1000		1000		500	
	Mechanical	8500		7000		4000		3000	

Fixed front wiring

X-X, Y-Y is the center of the three-pole circuit breaker

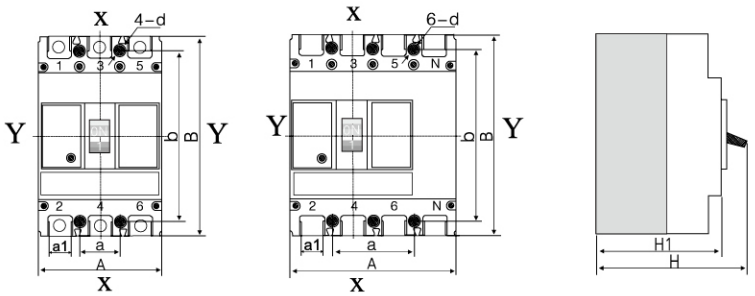


Table 5

Current(A)	Number of poles	Dimensions				Installation size			
		A	B	H	H1	a	a1	b	φ
MM1E-125	3	92	150	110	92	30	18	129	4.5
	4	122				60			
MM1E-250	3	107	165	110	90	35	23	126	4.5
	4	142				70			
MM1E-400 MM1E-630	3	150	257	153	107	44	29	194	7
	4	198				88			
MM1E-800	3	210	580	156	116	70	44	243	7
	4	280				140			

Fix the circuit breaker body, base plate (for wiring behind the board), and base (for plug-in wiring) on the mounting plate.

MLELE

MM1L

Earth Leakage Circuit Breaker

Molded case circuit breaker series

www.chmldq.com / www.mlele.com

Application

MM1L series earth leakage circuit breaker is one of the new type earth leakage breakers which has been developed by the company using international advanced design and manufacturing technology. Suitable for a line of AC50/60Hz, rated voltage up to 400V, rated current 16A to 630A. and is acted as infrequently changeover of circuit or infrequent starting of motor.The breaker has overload, short-circuit and under-voltage protective function, which can protect the circuit and the power equipment against damage, meanwhile, it can provide protection to these fire risk that caused by these long-time existed grounding fault that can not be detected by the over-current protection.

This breaker can be installed vertically(upright) or horizontally(transverse).

The wiring of the breaker can not be in adverse direction, that means power supply line must be connected to terminal 1,3 and 5,and the load line connected to terminal 2,4 and 6.

The rated residual operating current I △ n and the maximum breaking time can be adjusted on site according to practical condition.

The leakage protection module still can work normally when the phase voltage reduced to 50V.It has the same overall size with the MM1 series breakers, which make the installation more exchangeable.

The breakers are suitable for isolation, its symbol are: —/ |×—

The breakers comply with the demands of the following standards:

IEC60947-1 and GB/T 14048.1 General

IEC60947-2 and GB 14048.2 Low voltage breakers

IEC60947-4 and GB 14048.4 Contactors and motor starters

IEC60947-5.1 and GB 14048.5 Electrical equipments of electromechanical control circuit

Main Technical Specifications

Table 1

Type		MM1L-125			MM1L-250			MM1L-400		MM1L-630/800	
Frame current Inm(A)		125			250			400		630/800	
Rated current In(A)		30,40,50,63 80,100,125			125,160,180 200,225,250			225,250,315 350,400		400,500,630 700,800	
Pole number		2,3,4			2,3,4			3,4		3,4	
Rated insulation voltage Ui(V)		AC800									
Rated working voltage Ue(V)		AC400									
Rated impulse withstand voltage Uimp(V)		8000									
Arc-over distance(mm)		50									
Breaking capacity grade		L	M	H	L	M	H	M	H	M	H
Limiting short-circuit breaking capacity Icu (kA)	AC400V	35	50	65	35	50	65	50	80	65	80
Service short-circuit breaking capacity Ics(kA)	AC400V	25	35	50	25	35	50	35	50	42	50
Rated residual operating current I △ n(mA)	Non-delay type	100/300/500									
	Delay type	100/300/500								300/500/1000	
Rated residual non-operating current I △ no(mA)		1/2 I △ n									
Operation performance (time)	Electrified	1500			1500			1000		1000	
	Unelectrified	8500			8500			7000		4000	

Note: According to the pole number of product, it classifies three and four poles.The neutral pole (N-Pole) of the four-poles products has four types:

Type A: N-pole without over-current release unit, it has been connected all the time, not closing and opening with the other three poles.

Type B: N-pole without over-current release unit, which closing and opening with the other three poles.

Type C: N-pole fixed with over-current release unit, which closing and opening with the other three poles.

Type D: N-pole fixed with over-current release unit, it has been connected all the time, not closing and opening with the other three poles.

1. The limiting breaking and arc-over distance includes horizontal and vertical installation.

2. If the three-pole breaker of this series is connected with three phase load, the load can not have neutral line, otherwise the breaker will have fault action.

3. If the three-pole breaker of this series is connected with single phase load, the phase line will be connected to the left pole, and the neutral line is connected to the right pole, the middle pole is blanket

Protection Characteristic

The thermal release of the breaker has again-time-limit property; the electromagnetic release is inst.
Operation, its property see table 2(for distribution),table 3 (motor protection).

Table 2

Rated current of release(A)	Thermal release(ambient temperature +40°C)		Electromagnetic release tripping current(A)
	1.05In(cold state) non-trip time (h)	1.03In(hot state) trip time (h)	
10≤In≤63	1	1	10In±20%
63≤In≤125	2	2	5In±20% 10In±20%
125≤In≤630	2	2	

Table 3

Rated current of release	Thermal release(ambient temperature +40°C)				Electromagnetic release tripping current(A)
	1.0In(cold state) non-trip time(h)	1.20In(hot state) trip time(h)	1.50In(thermal state) trip time	7.2In(cold state) trip time	
10≤In≤400	2	2	8min	6s<Tp≤20s	12In±20%

Residual Current Operating Time of Earth Leakage Circuit Breaker

Non-delay type operation characteristics see table 4(I △ n≤30mA should be Non-delay type)

Table 4

Rated current		I △ n	2I △ n	5I △ n	10I △ n
Non-delay type	Max.breaking time(s)	0.3	0.15	0.04	0.04

Note: [a]to I △ n≤30mA earth leakage circuit breaker, 0.25A can instead of 5I △ n

According to[a], adopt 0.25A, then 10 I △ n is 0.5A.

Delay type operation characteristics see table 5

Limiting non-driven time of delay type earth leakage circuit breaker according to 2I △ n,operation characteristics see table 5

Table 5

Delay time (s)	Max. breaking time(s) at I △ n	Limiting non-driven time(s)at 2I △ n	Max. breaking time(s)	Max. breaking time(s) at 5I △ n	Max. breaking time(s) at 10I △ n
0.1	0.4	0.06	0.2	0.15	0.15
0.2	0.5	0.06	0.2	0.15	0.15
0.3	0.6	0.1	0.4	0.3	-
0.4	0.7	0.2	0.5	0.4	-
0.5	0.8	0.3	0.6	0.5	-
0.6	0.9	0.4	0.7	0.6	-
0.7	1.0	0.5	0.8	0.7	-

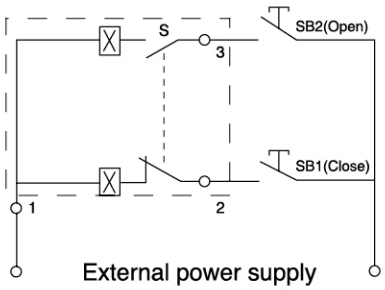
Back panel connection

Accessories of Circuit Breaker

The external accessories of the breaker

Electromagnetic operation device and Motor-driven operation device

1) Wiring diagram of type CDM electromagnetic operation device(fitting MM1L-100,250) see the following drawing (wiring diagram of the external accessories of the breaker in the dotted frame)



Electromagnetic operation device

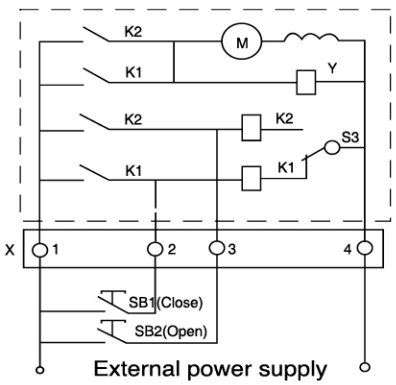
2) Wiring diagram of type CD motor-driven operation device (fiting MM1L-400,630) see belows(wiring diagram of the external accessories of the breaker in the dotted frame)

Code description:SB1,SB2 stand for push button.(provided by users themselves)

Number“1”,“2”,“3”stand for number of wiring terminals.

Voltage rating:AC230V、400V, DC 220V

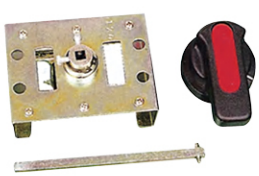
Motor-driven operation device



Code description: SB1,SB2 stand for push button. (provided by users)

“X”stands for line connection terminals

Voltage rating:AC50/60Hz 230V、400V; DC220V



Rotary handle operation device

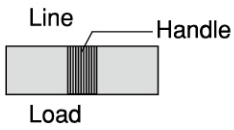
Rotary handle operation device

The mechanism is used with moulded case circuit breaker to operate the draw-out panel. Power distribution panel and supply box outside the panel by turning the handle ,and to ensure the door of panel would not be openned when the breaker being on.

The hand-drive mechanism can be equiped with two types of operation, one is “A” model square handle , the other is “B” model round handle.

The Internal Accessories of the Breaker

Release pattern and accessories code see following table



UVR: Under-voltage release SHT: Shunt release
AL: Alarm contact AX: Auxiliary contact

Release pattern and accessories code	Name / Type	MM1L-100,225	MM1L-400	MM1L-630
200,300	Without accessories	200:magnetic release (only short circuit protection 300: thermal magnetic release(both overload and short circuit protection)		
208,308	Alarm contact	AL	AL	AL
210,310	Shunt release	SHT	SHT	SHT
220,320	Auxiliary contact	AX	AX	AX
230,330	Under-voltage release	UVR	UVR	UVR
228,328	Auxiliary contact, Alarm contact	AL AX	AL AX	AL AX

Under-voltage release

Shunt release

Alarm contact

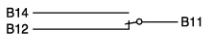
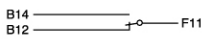
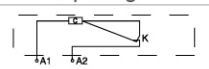
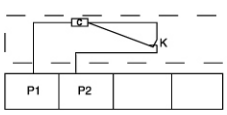
Auxiliary Contact

The technical parameter and functions of the accessories

Accessory	Rated operating voltage(V)			
	AC50/60Hz		DC	
Shunt release Us	220(230)	380(400)	110	220
Under-voltage release Us	220(230)	380(400)		

Auxiliary contact and Alarm contact: Auxiliary contact is as same as Alarm contact , the technical parameter see following table

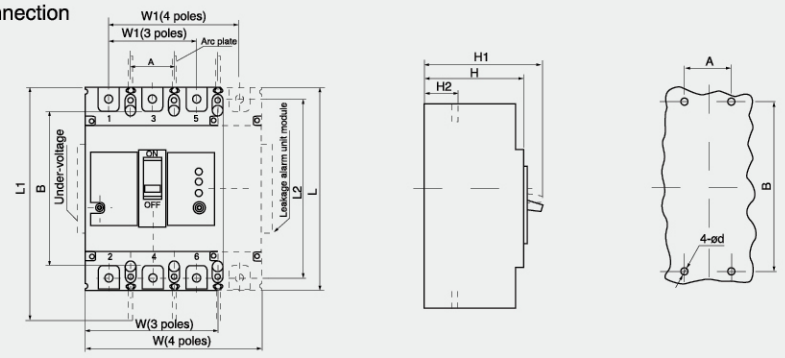
Rated thermal current Ith(A)	Rated operating current Ie(A)		Suited Frame Inm(A)
	AC380V	DC220V	
3	0.3	0.15	100,225
3	0.4	0.15	400,630

Accessory	Function	Wiring connection diagram
Alarm contact	Indicate circuit breaker at tripping	 The position of breaker at opening and closing
Auxiliary contact	Indicate circuit breaker at opening or closing	 The position of breaker at opening
Shunt release	The shunt release should make the breaker trip reliably when the operatiopn voltage is 70%-110% of rated control voltage	 The micro switch will cut by itself when breaker open
Under-voltage release	When Ue is 35%-70% of the rated control voltage, the under voltage release should make the breaker trip correctly; When Ue is 85%-110% of the rated control voltage, the under voltage release should make the breaker close; In case of Ue less than 35%of the rated control voltage should prevent the breaker from closing	

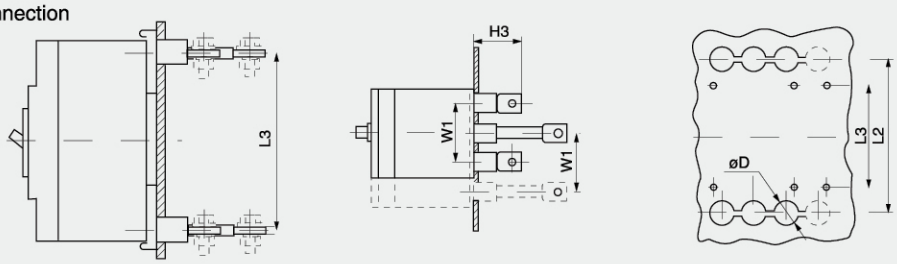
Outline and Installation Dimension(mm)

Type	Outline dimensions																			Installation dimensions		
	Front panel connection								Back panel connection			Plug-in connection										
	W	L	H	W1	L1	L2	H1	H2	L3	H3	D	L4	L5	H4	H5	H6	C	D	D1	A	B	d
MM1L-100M,H/3P	92	150	92	60	200	132	110	28.5	90	93	22	168	92	50	64	76	56	60	6.5	30	129	4.5
MM1L-100M,H/4P	122	150	92	90	200	132	110	28.5	90	93	22	168	92	50	64	76	56	90	6.5	30	129	4.5
MM1L-225M,H/3P	107	165	90	70	265	144	110	24	93	100	24	183	94	50	71.5	86.5	54	70	6.5	35	126	5.5
MM1L-225M,H/4P	142	165	103	105	265	144	110	24	93	100	24	183	94	50	71.5	86.5	54	105	6.5	35	126	5.5
MM1L-400M,H/3P	150	257	106.5	96	441	224	146.5	38	164	108.5	32	279	-	60	83.5	106.5	70	105	8.5	44	194	7
MM1L-400M,H/4P	198	257	106.5	144	441	224	146.5	38	164	108.5	32	279	-	60	83.5	106.5	70	129	8.5	44	194	7
MM1L-630M,H/3P	210	280	115.5	145	480	243	155	45.3	158	84	48	296	-	61	97	148	140	143	10	70	243	7
MM1L-630M,H/4P	280	280	115.5	210	480	243	155	45.5	158	84	48	296	-	61	97	148	140	210	10	70	243	7

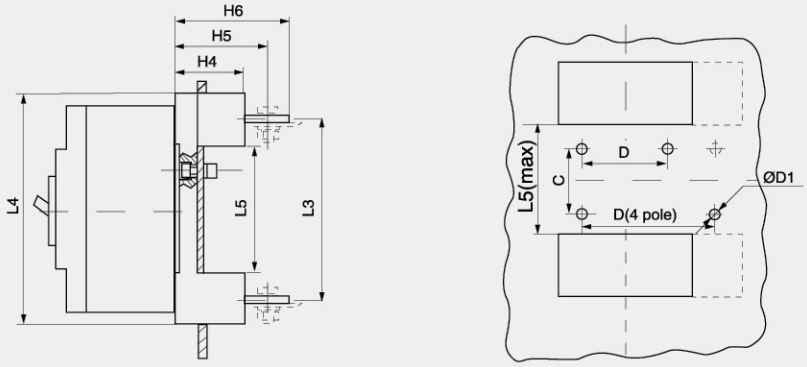
Front panel connection



Back panel connection



Plug-in connection



MLELE

MM1DPHU

Moulded Case Circuit Breaker

Molded case circuit breaker series

Application

MM1DC series DC moulded case circuit breaker is developed by advanced design and manufacturing technology, suitable for a the circuit of AC50/60Hz, rated voltage is DC250V,DC500V,DC750V and DC 1000V, rated current up to 400A, the circuit breaker have function of short circuit,overload and under-voltage protection to protect circuit and power equipment against damage. The breaker are comply with the IEC60947-1 and IEC60947-2.

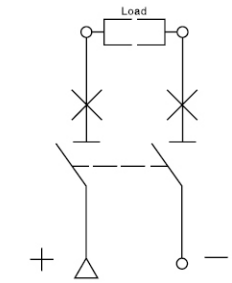
Main Technical Specifications

Type		MM1DC-125				MM1DC-250				MM1DC-400	
Frame current Inm(A)		125				250				400	
Rated current In(A)		10,16,20,25,32,40 50,63,80,100,125				125,140,160,180 200,225,250				250,315,350,400	
Pole number		1	2	3	4	1	2	3	4	3	4
Rated insulation voltage Ui(V)		1000									
Rated impulse withstand voltage Uimp(V)		8000									
Rated working voltage Ue(V)		DC250	DC500	DC750	DC 1000	DC250	DC500	DC750	DC 1000	DC750V DC1000V	DC1000V DC1500V
Using category		A									
Isolation		O									
Arcing distance(mm)		≤50								≤100	
Rated short time making capacity Icm (kA)		100%Icu									
Rated limiting short-circuit breaking capacity Icu (kA)	DC250V	35				35					
	DC500V		35				35				
	DC750V			20				20		50	
	DC1000V				15				15	35	35
	DC1500V										25
Rated service short-circuit breaking capacity Ics(kA)		75%Icu									
Electrical life (times)		2000				2000				1000	
Mechanical life (times)	Without maintenance	10000				10000				5000	
	Without maintenance	20000				20000				10000	
Shunt release		AC230V 400V DC24V~30V DC220V~250V									
Under-voltage release		DC220V~250V									
Auxiliary contact		AC-15:AC400/0.3A DC-13:DC250V/0.15A									
Alarm contact		AC-15:AC400/0.3A DC-13:DC250V/0.15A									
Motor-driven operation device		AC110V 230V 400V DC24V~30V, DC110V~125V, DC220V~250V									

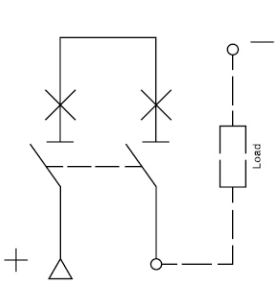
Wiring diagram

Two pole circuit breaker

C type connection

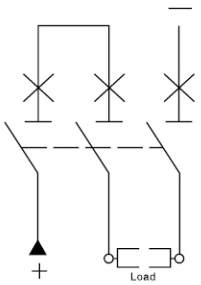


D type connection

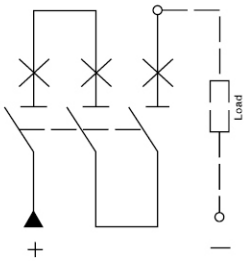


Three pole circuit breaker

E type connection

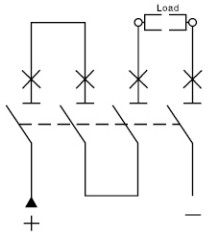


F type connection

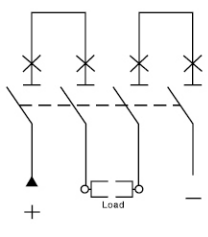


Four pole circuit breaker

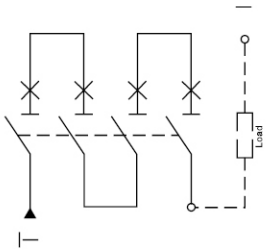
G type connection



H type connection



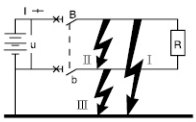
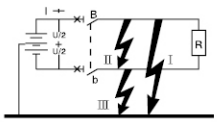
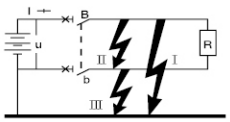
I type connection



Power system suitable for above wiring diagram

Rated working voltage	Power/Load wiring type						
	Ungrounding system		Negative pole grounding system				Core point grounding system
DC250V	C		-	D			C
DC500V	E	-	D	E	-	-	C
DC750V	E	H	E	F	G	I	H
DC1000V	-	H	-	-	G	I	H

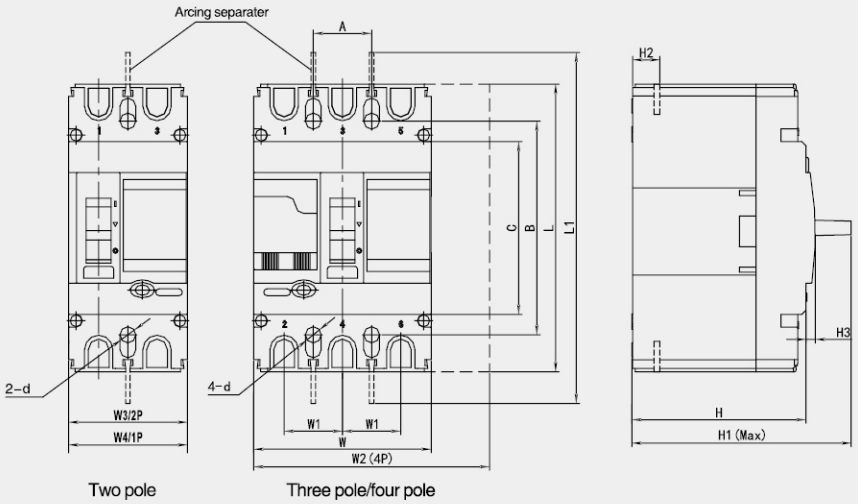
Application in DC Grounding system

System catelogy		Grounding system		No grounding system
		Negative pole grounding	Core point grounding	
All of fault category				
Fault effect	Fault I	Producing the highest short-circuil current Breaking the positive pole contact connected to power	U/2 voltage,producing the highest short-circuil current effect Breaking the positive pole contact connected to power	No effect
	Fault II	Producing the highest short-circuil current But the contaets in series are all breaking	Producing the highest short-circuil current But the contaets in series are all breaking	Producing the highest short-circuil current But the contaets in series are all breaking
	Fault III	No effect	The same as fault I, but breaking the negative pole contact connected to power	No effect
The most serious condition		Fault I	Fault I and Fault III	Fault II
Breaking pole condition		Can be in series on the positive pole,breaking both poles	With U/2, use breakinghighest short-circuitcurrent to each pole	Breaking both poles

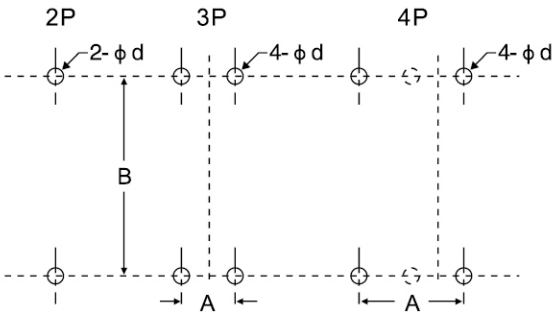
Wiring conduct selection

Rated current(A)	Section area(mm²)	Rated current(A)	Section area(mm²)
16,20	2.5	125,140	50
25	4	160	70
32	6	180,200,225	95
40,50	10	250	120
63	16	315,350	185
80	25	400	240
100	35		

Outline and Installation Dimension(mm)



Remarks:The arcing separaters are only installed between the phase lines



Type		MM1DC-100				MM1DC-250				MM1DC-400	
		1P	2P	3P	4P	1P	2P	3P	4P	3P	4P
Outline dimensions	C	87.5				102				129	
	H	87				103				105	
	H1	105				127				155	
	H2	24				24				38	
	H3	4				5.5				6.5	
	L	150				165				257	
	L1	250				360				457	
	W	92				107				150	
	W1	30				35				48	
	W2	122				142				198	
	W3	65				75				/	
	W4	38				43					
Installation dimensions	A	29	/	30	60	31.5	/	35	70	44	88
	B	129				126				194	
	φd	4.5				4.5				7	

MLELE

DZ47-100

Miniature circuit Breaker

Small Circuit Breaker Series

www.chmldq.com / www.mlele.com

Application

DZ47-100 is such features as delicate appearance, light weight, excellent and reliable performance, high breaking capacity, rapid tripping and mounted by rail. Its enclosure and components adopts high fire-retarding and shock-resistance plastic of long durability. It mainly serves for protecting the circuits of AC 50/60Hz, 230V of single pole, 400V of two poles or three or four poles from overload or short-circuit, and also for unfreguent making and breaking electrical apparatus and lighting circuit.It conforms with the standards of IEC60947-2.

Main Technical Parameter

Type	DZ47-100	
Pole	1P	2P,3P,4P
Rated current (A)	63,80,100	
Rated voltage (V)	230	400
Ambient temperature	-5℃ ~+40℃	
Type of instantaneous release	C,D	
Rated short circuit breaking capacity Icn(kA)	6	

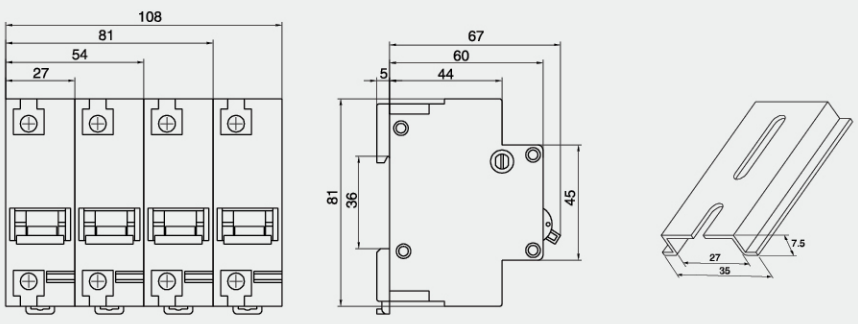
The Over-current Protection Property

Ambient temperature	Initial status	Test current	Test time	Expected result	Note
40±2℃	Cold position	1.05In(In≤63A)	t≤1h	Non-release	-
	Cold position	1.05In(In > 63A)	t≤2h	Non-release	-
	Carried out immediately after previous test	1.30In(In≤63A)	t < 1h	Release	Current smoothly rises to specified value within 5s
		1.30In(In > 63A)	t < 2h	Release	
-5~+40℃	Cold position	8.00In	t≤0.2s	Non-release	-
	Cold position	12.00In	t < 0.2s	Non-release	-

Applicable Conducting Wire

Rated current(A)	Nominal cross section of wire (mm²)
63A	16
80A	25
100A	35

Outline & Installation Dimension(mm)



MLELE

DZ47-63H

Miniature circuit Breaker

F Small Circuit Breaker Series

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Application

DZ47-63H is applicable to a line of AC 50/60Hz,230/400V in single pole,400V in double,three,four poles for protecting overload and short circuit,and rated current up to 63A. It can also be used for infrequent line conversion under the normal condition.The breaker is applicable to lighting distribution system in industrial enterprise, commercially district, high-rise building and dwelling house.It conforms with the standards of IEC60898 -1.

Main Technical Parameter

Type	DZ47-63H 1P			
Pole	1P		2P,3P,4P	
Rated current (A)	6,10,16,20,25,32,40,50,63			
Rated voltage (V)	230/400		400	
Ambient temperature	-5℃ ~+40℃			
Type of instantaneous release	C	D	C	D
Rated short circuit breaking capacity Icn(kA)	1-32A:6 50-63A:4	6	1-32A:6 50-63A:4	6

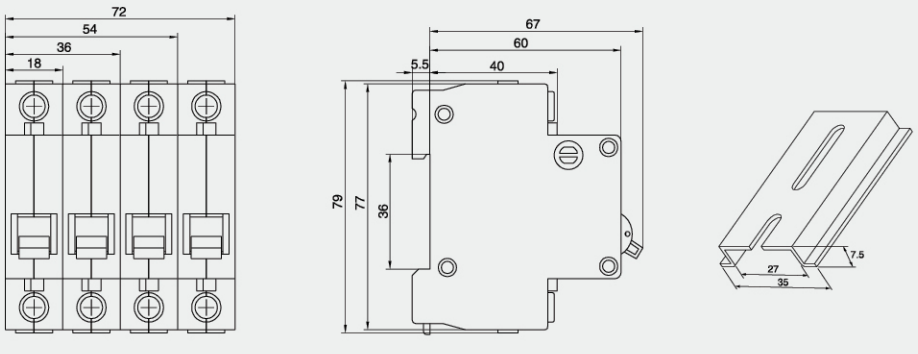
Applicable Conducting Wire

Rated current(A)	Nominal cross section of wire (mm²)
1-6A	1
10A	1.5
16,20A	2.5
25A	4
32A	6
40,50A	10
63A	16

The Over-current Protection Property

Ambient temperature	Initial status	Test current	Test time	Expected result	Note
30±2℃	Cold position	1.13In	t≤1h	Non-release	-
	Carried out immediately after previous test	1.45In	t < 1h	Release	-
	Cold position	2.55In	1s < t < 60s(In≤32A)	Release	Current smoothly rises to specified value within 5s
	Cold position	2.55In	1s < t < 120s(In > 32A)	Release	
-5~+40℃	Cold position	3In	t≤0.1s	Non-release	Type B
	Cold position	5In	t < 0.1s	Release	Type B
	Cold position	5In	t≥0.1s	Non-release	Type C
	Cold position	10In	t < 0.1s	Release	Type C
	Cold position	10In	t≥0.1s	Non-release	Type D
	Cold position	20In	t < 0.1s	Release	Type D

Outline & Installation Dimension(mm)



MLELE

DZ47-63

Miniature circuit Breaker

Small Circuit Breaker Series

www.chmldq.com / www.mlele.com

Application

DZ47-63 is applicable to a line of AC 50/60Hz,230/400V in single pole,400V in double,three,four poles for protecting overload and short circuit,and rated current up to 63A. It can also be used for infrequent line conversion under the normal condition.The breaker is applicable to lighting distribution system in industrial enterprise, commercially district, high-rise building and dwelling house.It conforms with the standards of IEC60898 -1.

Main Technical Parameter

Type	DZ47-63			
Pole	1P		2P,3P,4P	
Rated current (A)	6,10,16,20,25,32,40,50,63			
Rated voltage (V)	230/400		400	
Ambient temperature	-5℃ ~+40℃			
Type of instantaneous release	C	D	C	D
Rated short circuit breaking capacity Icn(kA)	1-32A:6 50-63A:4	4	1-32A:6 50-63A:4	4

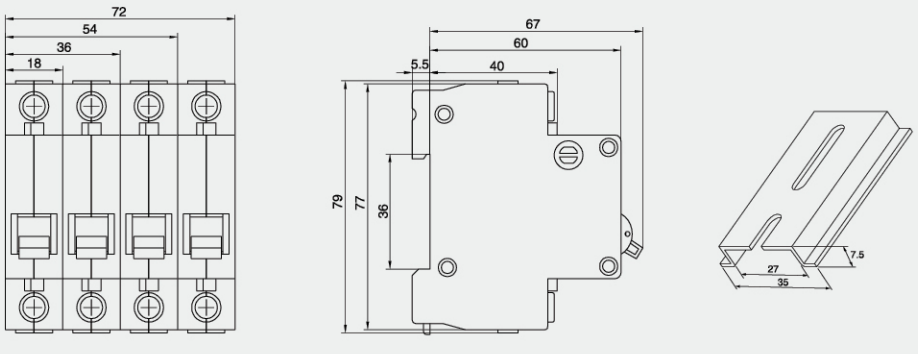
Applicable Conducting Wire

Rated current(A)	Nominal cross section of wire (mm²)
1-6A	1
10A	1.5
16,20A	2.5
25A	4
32A	6
40,50A	10
63A	16

The Over-current Protection Property

Ambient temperature	Initial status	Test current	Test time	Expected result	Note
30±2℃	Cold position	1.13In	t≤1h	Non-release	-
	Carried out immediately after previous test	1.45In	t < 1h	Release	-
	Cold position	2.55In	1s < t < 60s(In≤32A)	Release	Current smoothly rises to specified value within 5s
	Cold position	2.55In	1s < t < 120s(In > 32A)	Release	
-5~+40℃	Cold position	3In	t≤0.1s	Non-release	Type B
	Cold position	5In	t < 0.1s	Release	Type B
	Cold position	5In	t≥0.1s	Non-release	Type C
	Cold position	10In	t < 0.1s	Release	Type C
	Cold position	10In	t≥0.1s	Non-release	Type D
	Cold position	20In	t < 0.1s	Release	Type D

Outline & Installation Dimension(mm)



MLELE

DZ47LE-63

Residual Current Operated Circuit Breaker With Over-current Protection

Small Circuit Breaker Series

www.chmldq.com / www.mlele.com

Application

DZ47LE-63 is applicable to a line of AC 50/60Hz,rated voltage 230V for single pole two-wire, 2-pole or 400V for 3-pole,3-pole 4-wire, 4-pole and rated current up to 63A. It can protect the line and motor from overload and short circuit. It can also be used for infreguent line conversion and infrequent motor start. It conforms with the standards of IEC60947-2.

Main Technical Parameter

Type	DZ47LE-63	
Pole	1P+N,2P	3P,3P+N,4P
Rated current (A)	6,10,16,20,25,32,40,50,63	
Rated voltage (V)	230	400
Rated short circuit breaking capacity Icn(kA)	6-32A:6/40-63A:4.5	
Rated residual making/breaking capacity I △ m(A)	2000	
Rated residual action current I △ n(A)	0.03;0.05;0.1;0.3	
Rated residual non-action current I △ no(A)	0.5I △ n	

Applicable Conducting Wire

Rated current(A)	1-6A	10A	16,20A	25A	32A	40,50A	63A
Nominal cross section of wire (mm²)	1	1.5	2.5	4	6	10	16

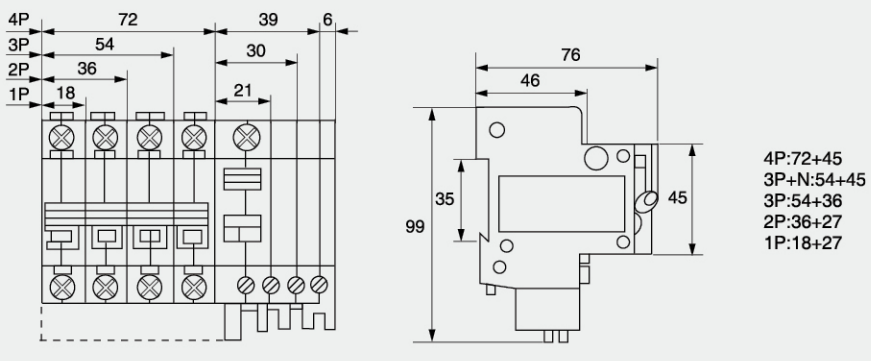
Residual Current Breaking Time

In(A)	I △ n(A)	Breaking time(s) when equals to rating following				
		I △ n	2I △ n	5I △ n	5,10,20,50,100,200,500[a](A)	I △ t[b]
6-63	0.03,0.05,0.1,0.3	0.1	0.06	0.04	0.04	0.04

The Over-current Protection Property

Ambient temperature	Initial status	Test current	Test time	Expected result	Note
30±2℃	Cold position	1.13In	t≤1h	Non-release	-
	Carried out immediately after previous test	1.45In	t < 1h	Release	-
	Cold position	2.55In	1s < t < 60s(In≤32A)	Release	Current smoothly rises to specified value within 5s
	Cold position	2.55In	1s < t < 120s(In > 32A)	Release	
-5~+40℃	Cold position	3In	t≤0.1s	Non-release	Type B
	Cold position	5In	t < 0.1s	Release	Type B
	Cold position	5In	t≥0.1s	Non-release	Type C
	Cold position	10In	t < 0.1s	Release	Type C
	Cold position	10In	t≥0.1s	Non-release	Type D
	Cold position	20In	t < 0.1s	Release	Type D

Outline & Installation Dimension(mm)



MLELE

CJX2

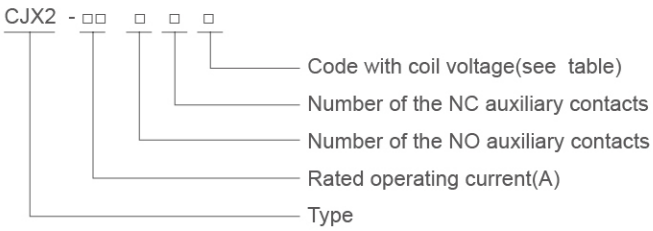
Series AC contactor

Communication contactor series

Applicable scope

CJX2 series AC contactors (simplified AC contactor in the following)are suitable for using 50Hz or 60Hz rated rated voltage up to 660V rated current up to 95A. It is mainly used for making/breaking electric circuits ata long distance and for frequent starting/stopping and control AC motors. Combined with the auxiliary contact group, air delayer, machine inter locking device etc. It is combined into the delay contactor. Mechanicat inter locking contactor startriangle starter with the thermal relay.It iscombinde into the tle electromagnetic startermechanical.

Model and its meaning



The main technical parameters

Type	CJX2-09	CJX2-12	CJX2-18	CJX2-25	CJX2-32	CJX2-40	CJX2-50	CJX2-65	CJX2-80	CJX2E-95
Conventional insulation(V)	660	660	660	660	660	660	660	660	660	660
Conventional thermal current(A)	20	25	32	40	50	60	75	80	110	125
Rated operational current 380V AC3	9	12	18	25	32	40	50	65	80	95
Controlled power(kW)	2.2	3	4	5.5		11	15	18.5	22	25
	4	5.5	7.5	11		18.5	22	30	37	45
	4	5.5	9	11		22	25	37	45	45
	4	5.5	9	11		22	30	37	45	45
	5.5	7.5	10	15		30	33	37	45	45
Note	Install way The installation of the relays can use two screws and also use the 35mm installation rail					The installation of the relays can use three screws and also use the 75mm or 35mm installation rail				

Normal working conditions and installation conditions

- The ambient air temperature is: -5°C ~ +40°C , 24hours its average does not exceed +35°C .
- Elevation: no more than 2000 meters.
- Atmospheric conditions: At +40°C when the relative humidity of not more than 50%, at a lo-wer temperature can have a higher relative humidity, the wettest month average minimum te-mperature does not exceed +25°C , the average monthly maximum relative Humidity does not-exceed 90%. And consider the occurrence of temperature due to condensation on the product.
- Pollution Level: 3 level.
- Installation category: III category.
- Installation Conditions: the installation surface and the vertical slope of more than ± 50°.
- Shock Vibration: The product should be installed and used where there is no significant sha-king, shock and vibration.

MLELE

NCJX2-D

Series AC contactor

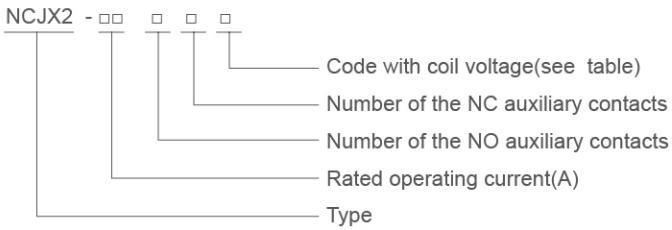
Communication contactor series

www.chmldq.com / www.mlele.com

Applicable scope

NCJX2-D series AC contactor (simplified as contactor in the following) is suitable for using in the circuits up to the rated voltage 660V AC 50Hz or 60Hz, rated current 95A, for making and breaking and frequent starting, controlling the AC motor. Combined with the auxiliary contact group, air delayer, machine interlocking device etc,it is combined into the delay contactor, mechanical interlocking device etc, it is combined into the delay contactor, mechanical interlocking contactor,startriangle starter, with the thermal relay, it is combined into the electromagnetic starter.

Model and its meaning



Coil voltage(V)	24	32	48	110	127	220
50Hz	B5	C5	E5	F5	G5	M5
60Hz	B6	C6	E6	F6	G6	M6
50/60Hz	B7	C7	E7	F7	G7	M7

240	380	415	440	480	660	660
U5	Q5	N5	R5	T5	S5	Y5
U6	Q6	N6	R6	T6	S6	Y6
U7	Q7	N7	R7	T7	S7	Y7

The main technical parameters

Type	NCJX2-D09	NCJX2-D12	NCJX2-D18	NCJX2-D25	NCJX2-D32	NCJX2-D40	NCJX2-D50	NCJX2-D65	NCJX2-D80	NCJX2-D95
Conventional insulation(V)	660	660	660	660	660	660	660	660	660	660
Conventional thermal current(A)	20	25	32	40	50	60	75	80	110	125
Rated operational current 380V AC3	9	12	16	25	32	40	50	63	80	95
Controlled power(kW)	2.2	3	4	5.5		11	15	18.5	22	25
	4	5.5	7.5	11		18.5	22	30	37	45
	4	5.5	9	11		22	25	37	45	45
	4	5.5	9	11		22	30	37	45	45
	5.5	7.5	10	15		30	33	37	45	45
Note	The installation of the relays can use two screws and also use the 35mm installation rail					The installation of the relays can use three screws and also use the 75mm or 35mm installation rail				

Note:3P:Three qairs of main contacts,NO:one pair of No auxiliary contacts. NC:one pair of NC auxiliary contacts.

Normal working conditions and installation conditions

- The ambient air temperature is: -5℃ ~ +40℃ , 24hours its average does not exceed +35℃ .
- Elevation: no more than 2000 meters.
- Atmospheric conditions: At+40℃ when the relative humidity of not more than 50 % , at a lower temperature can have a higher relative humidity, the wettest month average minimum temperaturedoes not exceed +25℃ , the average monthly maximum relative Humidity does not exceed 90%. And consider the occurrence of temperature due to condensation on the product.
- Pollution Level: 3 level.
- Installation category: III category.
- Installation Conditions: the installation surface and the vertical slope of more than ± 50°.
- Shock Vibration: The product should be installed and used where there is no significant sha-king,shock and vibration.

MLELE

NCJX2-D

Series AC contactor

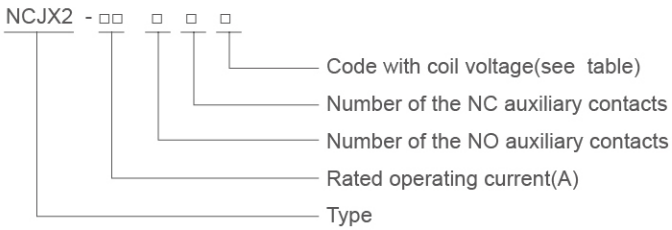
Communication contactor series

www.chmldq.com / www.mlele.com

Applicable scope

NCJX2-D series AC contactor (simplified as contactor in the following) is suitable for using in the circuits up to the rated voltage 660V AC 50Hz or 60Hz, rated current 95A, for making and breaking and frequent starting, controlling the AC motor. Combined with the auxiliary contact group, air delayer, machine interlocking device etc,it is combined into the delay contactor, mechanical interlocking device etc, it is combined into the delay contactor, mechanical interlocking contactor,startriangle starter, with the thermal relay, it is combined into the electromagnetic starter.

Model and its meaning



Coil voltage(V)	24	32	48	110	127	220
50Hz	B5	C5	E5	F5	G5	M5
60Hz	B6	C6	E6	F6	G6	M6
50/60Hz	B7	C7	E7	F7	G7	M7

240	380	415	440	480	660	660
U5	Q5	N5	R5	T5	S5	Y5
U6	Q6	N6	R6	T6	S6	Y6
U7	Q7	N7	R7	T7	S7	Y7

The main technical parameters

Type	NCJX2-D09	NCJX2-D12	NCJX2-D18	NCJX2-D25	NCJX2-D32	NCJX2-D40	NCJX2-D50	NCJX2-D65	NCJX2-D80	NCJX2-D95
Conventional insulation(V)	660	660	660	660	660	660	660	660	660	660
Conventional thermal current(A)	20	25	32	40	50	60	75	80	110	125
Rated operational current 380V AC3	9	12	16	25	32	40	50	63	80	95
Controlled power(kW)	2.2	3	4	5.5		11	15	18.5	22	25
	4	5.5	7.5	11		18.5	22	30	37	45
	4	5.5	9	11		22	25	37	45	45
	4	5.5	9	11		22	30	37	45	45
	5.5	7.5	10	15		30	33	37	45	45
Note	The installation of the relays can use two screws and also use the 35mm installation rail					The installation of the relays can use three screws and also use the 75mm or 35mm installation rail				

Note:3P:Three qairs of main contacts,NO:one pair of No auxiliary contacts. NC:one pair of NC auxiliary contacts.

Normal working conditions and installation conditions

- The ambient air temperature is: -5℃ ~ +40℃ , 24hours its average does not exceed +35℃ .
- Elevation: no more than 2000 meters.
- Atmospheric conditions: At+40℃ when the relative humidity of not more than 50 % , at a lower temperature can have a higher relative humidity, the wettest month average minimum temperaturedoes not exceed +25℃ , the average monthly maximum relative Humidity does not exceed 90%. And consider the occurrence of temperature due to condensation on the product.
- Pollution Level: 3 level.
- Installation category: III category.
- Installation Conditions: the installation surface and the vertical slope of more than ± 50°.
- Shock Vibration: The product should be installed and used where there is no significant sha-king,shock and vibration.

MLELE

CJX2-D

Series AC contactor

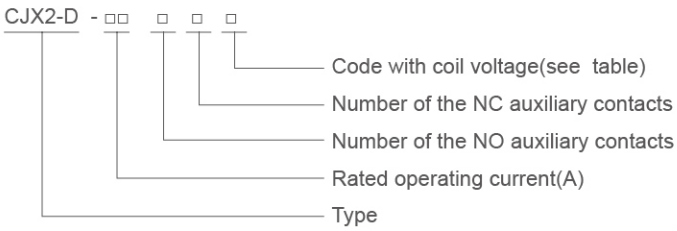
Communication contactor series

www.chmldq.com / www.mlele.com

Applicable scope

CJX2-D series AC contactor (the followings ara called contactor), it is used in 50Hz or 60Hz, allocated special with coil. Which can be used in the circuit of 40Hz-400Hz, voltage up to 660V, current up to less than 630A electric circuits, It is maining used for putting through and breaking the main circuit and also for frequently starting and controlling motor. It can unify the general electrical equipment, motor and circuit. The auxiliary contact group. Air timedelay head. Mechanical interlock contactor and startriangle starter. The thermal relay it can form the magnetic starter.

Model and its meaning



The main technical parameters

Type			CJX2-D115	CJX2-D150	CJX2-D185	CJX2-D225	CJX2-D265	CJX2-D330	CJX2-D400	CJX2-D500	CJX2-D630
Rated operational current(A)	AC-3	380V	115	150	185	225	265	330	400	500	630
		660V	86	107	118	125	170	325	305	355	460
	AC-4	380V	52	60	79	85	105	217	138	147	1880
		660V	49	61	69	82	98	118	135	145	170
Controlled squirrel-cage asynchronous motorJs max power pe(kW)	AC-3	380V	55	75	90	110	132	160	200	250	335
		660V	80	100	110	129	160	220	280	335	450
	AC-4	380V	25	30	40	45	55	63	75	80	100
		660V	45	55	30	75	90	110	129	140	160
Conventional thermal current(A)			200	250	275	315	350		500	700	1000
Rated operational voltage(Ue)			380、 660								
Rated insulation voltage(Ui)			660								
Operating frequency			IEC947、GB14048								
AC-3	Electrical endurance		60×10^4		50×10^4		30×10^4			20×10^4	
	h-1 Swiching frequency		600				300				
AC-4	Electrical endurance				15×10^4		8×10^4			5×10^4	
	h-1Swiching frequency		150								
Mechanical endurance($x10^6$)			3×10^6				1×10^6				
Auxiliary contacts	Conventional thermal current(Ith)		10								
	Electrical endurance	AC-15 AC-13	60×10^4		50×10^4		30×10^4			20×10^4	

Normal working conditions and installation conditions

- The ambient air temperature is: -5℃ ~ +40℃ , 24hours its average does not exceed +35℃ .
- Elevation: no more than 2000 meters.
- Atmospheric conditions: At+40℃ when the relative humidity of not more than 50 % , at a lower temperature can have a higher relative humidity, the wettest month average minimum temperaturedoes not exceed +25℃ , the average monthly maximum relative Humidity does not exceed 90%. And consider the occurrence of temperature due to condensation on the product.
- Pollution Level: 3 level.
- Installation category: III category.
- Installation Conditions: the installation surface and the vertical slope of more than ± 50°.
- Shock Vibration: The product should be installed and used where there is no significant sha-king,shock and vibration.

MLELE

CJX2-F

Series AC contactor

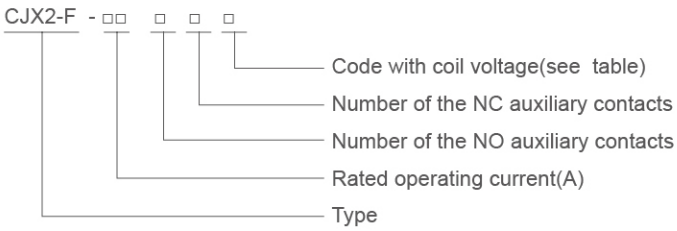
Communication contactor series

www.chmldq.com / www.mlele.com

Applicable scope

CJX2-F series AC contactor (the followings is called contactor), it is used in 50Hz or 60Hz, allocated special with coil. Which can be used in the circuit of 40-400Hz, voltage up to 600V, current up to less than 630A electric circuits , It is maining used for putting through and breaking the main circuit and also for frequently starting and controlling motor . It can unify the general electrical equipment , motor and circuit. The auxiliary contact group. Airtime delay head. Mechanical interlock contactor and star triangle starter. The thermalrelay it can form the magnetic starter.

Model and its meaning



The main technical parameters

Type			CJX2-F115	CJX2-F150	CJX2-F185	CJX2-F225	CJX2-F265	CJX2-F330	CJX2-F400	CJX2-F500	CJX2-F630
Rated operational current(A)	AC-3	380V	115	150	185	225	265	330	400	500	630
		660V	86	107	118	125	170	325	305	355	460
	AC-4	380V	52	60	79	85	105	217	138	147	1880
		660V	49	61	69	82	98	118	135	145	170
Controlled squirrel-cage asynchronous motorJs max power pe(kW)	AC-3	380V	55	75	90	110	132	160	200	250	335
		660V	80	100	110	129	160	220	280	335	450
	AC-4	380V	25	30	40	45	55	63	75	80	100
		660V	45	55	30	75	90	110	129	140	160
Conventional thermal current(A)			200	250	275	315	350		500	700	1000
Rated operational voltage(Ue)			380、 660								
Rated insulation voltage(Ui)			660								
Operating frequency			IEC947、GB14048								
AC-3	Electrical endurance		60×10^4		50×10^4		30×10^4			20×10^4	
	h-1 Swiching frequency		600				300				
AC-4	Electrical endurance				15×10^4		8×10^4			5×10^4	
	h-1Swiching frequency		150								
Mechanical endurance($x10^6$)			3×10^6				1×10^6				
Auxiliary contacts	Conventional thermal current(Ith)		10								
	Electrical endurance	AC-15 AC-13	60×10^4		50×10^4		30×10^4			20×10^4	

Normal working conditions and installation conditions

- The ambient air temperature is: -5℃ ~ +40℃ , 24hours its average does not exceed +35℃ .
- Elevation: no more than 2000 meters.
- Atmospheric conditions: At+40℃ when the relative humidity of not more than 50 % , at a lower temperature can have a higher relative humidity, the wettest month average minimum temperaturedoes not exceed +25℃ , the average monthly maximum relative Humidity does not exceed 90%. And consider the occurrence of temperature due to condensation on the product.
- Pollution Level: 3 level.
- Installation category: III category.
- Installation Conditions: the installation surface and the vertical slope of more than ± 50°.
- Shock Vibration: The product should be installed and used where there is no significant sha-king,shock and vibration.

MLELE

CJX2

Series DC contactor

Communication contactor series

www.chmldq.com / www.mlele.com

Applicable scope

CJX2 Series DC Operated AC contactor is suila ble for use in the circuit up to rated voltage up to 660V AC 50Hz or 60Hz and in rated current 9-95A in AC-3/380V load circuits.For remote controlling, circuit making, breaking and frequent starting AC motors.It can be also combined with the auxiliary contact group,air delayer, thermal relay devices etc.It has featu res of equable & reliable action,quick while working.

Model and its meaning

CJ X 2 - □□ □□

- The number of contacts, expressed in numbers
  - 10 means normally open main contact normally open auxiliary contact
  - 01 means three normally open main contact a normally closed auxiliary contact
- Basic specification code, with 380V, AC-3 rated current value
- Design Number
- Introduction
- DC contactor

The main technical parameters

Type	Rated work current(A)	Rated heat current 1th(A)	Rated work voltage Ue(V)	Rated insulating voltage Ue(V)	Controlled power (kW)					Eletrical life	Contacts Number
					220V	380V	415V	440V	660V		
CJX2-09Z	09	20	380V 660V	660V	2.2	4	4	4	5.5	100	3P+NO 3P+NC 3P+NO+N
CJX2-12Z	12	20			3	5.5	5.5	5.5	7.5	100	
CJX2-18Z	18	32			4	7.5	9	9	9	100	
CJX2-25Z	25	40			5.5	11	11	11	15	100	
CJX2-32Z	32	50			7.5	15	15	15	18.5	80	
CJX2-40Z	40	60			11	18.5	22	22	30	80	
CJX2-50Z	50	80			15	22	25	25	33	60	
CJX2-65Z	65	80			18.5	30	37	37	37	60	
CJX2-80Z	80	125			22	37	45	45	45	60	
CJX2-95Z	95	125			25	45	45	45	45	60	

Normal working conditions and installation conditions

- The ambient air temperature is: -5°C ~ +40°C , 24hours its average does not exceed +35°C .
- Elevation: no more than 2000 meters.
- Atmospheric conditions: At+40°C when the relative humidity of not more than 50 % , at a lower temperature can have a higher relative humidity, the wettest month average minimum temperaturedoes not exceed +25°C , the average monthly maximum relative Humidity does not exceed 90%. And consider the occurrence of temperature due to condensation on the product.
- Pollution Level: 3 level.
- Installation category: III category.
- Installation Conditions: the installation surface and the vertical slope of more than ± 50°.
- Shock Vibration: The product should be installed and used where there is no significant shaking,shock and vibration.

MLELE

CJT1

Series AC contactor

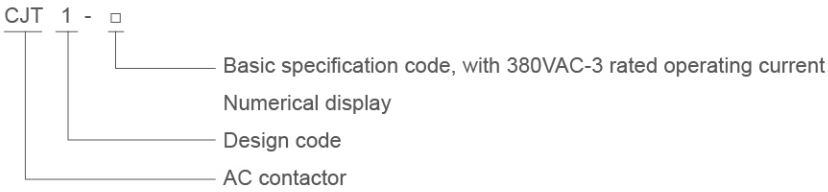
Communication contactor series

www.chmldq.com / www.mlele.com

Applicable scope

CJT1 series AC contactor(hereinafter referred to ascontactor)is suitable for the power system of AG 50Hz and rated working voltage up to 660V or the power system of rated working current up to 150A at 380V and rated working current up to 100A at 660V under AC-3 utilization, to make and break circuit in a far distance, or to frequently start and control AC motor. The contactor can be combined with thermal overload relay or electronic protection equipment to form into an electromagnetic starter, to protect the circuit against possible overload.The products are in conformity with such standards as GB 14048.4 and IEC 60947-4-1.

Model and its meaning



The main technical parameters

Type	Ui V	Ue V	Lth V	Ie under intermittent periodic duty(A)				AC-3 Pe (kW)
				AC-1	AC-2	AC-3	AC-4	
CJT1-10	690	220	10	10	10	10	10	2.2
		380						4
		660			5	5	5	4
CJT1-20	690	220	20	20	20	20	20	5.5
		380						10
		660			12	12	12	10
CJT1-40	690	220	40	40	40	40	40	11
		380						20
		660			25	25	25	20
CJT1-60	690	220	60	60	60	60	60	17
		380						30
		660			40	40	40	35
CJT1-100	690	220	100	100	100	100	100	28
		380						50
		660			60	60	60	50
CJT1-150	690	220	150	150	150	150	150	43
		380						75
		660			100	100	100	75

Normal working conditions and installation conditions

- The ambient air temperature is: -5°C ~ +40°C , 24hours its average does not exceed +35°C .
- Elevation: no more than 2000 meters.
- Atmospheric conditions: At+40°C when the relative humidity of not more than 50 % , at a lower temperature can have a higher relative humidity, the wettest month average minimum temperaturedoes not exceed +25°C , the average monthly maximum relative Humidity does not exceed 90%. And consider the occurrence of temperature due to condensation on the product.
- Pollution Level: 3 level.
- Installation category: III category.
- Installation Conditions: the installation surface and the vertical slope of more than ± 50°.
- Shock Vibration: The product should be installed and used where there is no significant shaking,shock and vibration.

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CJ20

Series AC contactor

Communication contactor series

www.chmldq.com / www.mlele.com

Applicable scope

CJ20 series AC contactor is suitable for the power system of AC 50Hz or 60Hz, rated workingvoltage up to 660V or 1140V and rated working current up to 630A, used to make and break circuit frequently in a far distance, while, it can be combined with thermal relay or electronic protectione quipment to form into an electromagnetic starter, to protect the circuit against possible overload.

The products are in conformity with such standards as GB 14048.4 and IEC 60947-4-1.

Model and its meaning

CJ 20 - □□ / □□

- Nos of auxiliary contact, digit indication
  20 means 2 NO, 11 means 1NO and1NC; 02 means 2 NC(these for 25A~43A);
  21 means 2NO and 1NC; 12 means 1NO and 2 NC(these for 63A~95A)
- Basic design code, nominal thermal current
- Design code
- AC contactor

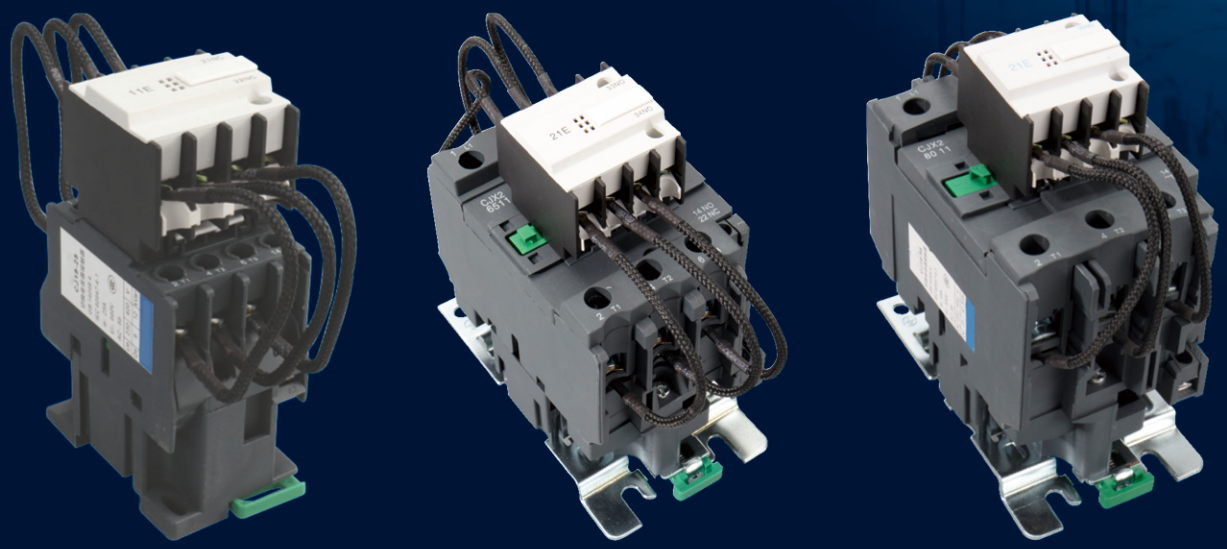
The main technical parameters

Type	Rated absolute Edge voltage (V)	Rated working power Pressure (V)	Agreed fever Electric current (A)	AC-3 time rating Current (A)	AC-3 control work Rate (kW)	AC-3 rated operation Frequency (next / h)	Fuse with fuse type	Coil voltage and Frequency	Coil consumption power(VA/W)		Electrical life of AC-3 (thousands of times)	Mechanical life (thousands of times)
									Start	Suction holding		
CJ20-10	690	220	10	10	22	1200	RT16-20 (NT00-20)	AC:50Hz: 36、127、220、380V DC:48、110、220V	65	8.3	1000	1000
		380		10	4							
		660		5.2	4	600			47.6	2.5		
CJ20-16		220	16	16	4.5	1200	RT16-32 (NT00-32)		62	8.5		
		380			7.5							
		660		13	11	600			47.8	2.6		
CJ20-25		220	32	25	5.5	1200	RT16-50 (NT00-50)		93.1	13.9		
		380			11							
		660		14.5	13	600			60	4.1		
CJ20-40		220	55	40	11	1200	RT16-80 (NT00-80)		175	19	120	1000
		380			12							
		660		25	22	600			82.3	5.7		
CJ20-63		220	80	63	18	1200	RT16-160 (NT0)		480	57		
		380			30							
		660		40	35	600			153	16.5		
CJ20-100		220	125	100	28	1200	RT16-250 (NT1)		570	61		
		380			50							
		660		63		600			175	21.5		
CJ20-160		220	200	160	48	1200	RT16-315 (NT2)		855	85.5	120	1000
		380			85							
		660		100		600			325	34		
CJ20-160/11	1140	1140	200	80	85	300						
CJ20-400	690	220	315	250	80	600	RT16-400 (NT2)	AC:50Hz: 36、127、220、380V DC:48、110、220V	1710	152	60	600
		380			132							
		660		200	190	300			565	65		
CJ20-630		220	400	400	115	600	RT16-500 (NT3)		1710	152		
		380			200							
		660		250	220	300			565	65		
CJ20-630		220	630	630	175	600	RT16-600 (NT3)		3578	250		
		380			300							
		660	400	400	350	300			790	118		
CJ20-630/11	1140	1140	400	400	400	120						

MLELE

CJ19

Series switch capacitor contactor



Communication contactor series

www.chmldq.com / www.mlele.com

Applicable scope

CJ19 series switching capacitor contactor(here in after referred to as contactor)is mainly used for AC 50Hz or 60Hz, rated working voltage to 380V The power line is for low voltage reactive power compen sation equipment to input or remove low voltage shunt capacitor. The contactor is equipped with an inrush current device, capable of Effectively reduce the impact of the inrush current on the capacitance and suppress the over voltage when opening.

Model and its meaning

CJ 19 - □□ / □□

- Nos of auxiliary contact, digit indication
  20 means 2 NO, 11 means 1NO and1NC; 02 means 2 NC(these for 25A~43A);
  21 means 2NO and 1NC; 12 means 1NO and 2 NC(these for 63A~95A)
- Basic design code, nominal thermal current
- Design code
- AC contactor

The main technical parameters

Item		CJ19-25	CJ19-32	CJ19-43	CJ19-63	CJ19-95
Electric lifetime (thousands of times)		10	10	10	10	10
Rated current (380VA)		17	23	29	43	63
Controllable capacity (kvar)	220V	6	9	10	15	22
	380V	12	18	20	30	44
Rated insulating voltage(V)		500	500	500	500	500
Surge limiting capacity		20Ie	20Ie	20Ie	20Ie	20Ie
Operating conditions		Absorbing: (85%~110%)Us;releasing: (20%~75%)Us				
Coil burden (startup/lasting) (VA)		220V	110/11	110/11	200/20	200/20
Control capacity of auxiliarycontact		AC-15 360VA; DC-13 33W				
Weight (kg)		380V	0.63	0.64	1.4	1.5

Normal working conditions and installation conditions

- The ambient air temperature is: -5℃ ~ +40℃ , 24hours its average does not exceed +35℃ .
- Elevation: no more than 2000 meters.
- Atmospheric conditions: At+40℃ when the relative humidity of not more than 50%,at a lower temperature can have a higher relative humidity
- Pollution Level: 3 level.
- Installation category: III category.
- Installation Conditions: the installation surface and the vertical slope of more than ± 50°.
- Shock Vibration : The product should be installed and used where there is no significant shaking, shock and vibration.

MLELE

LC2-D

Series mechanical interlocking contactor

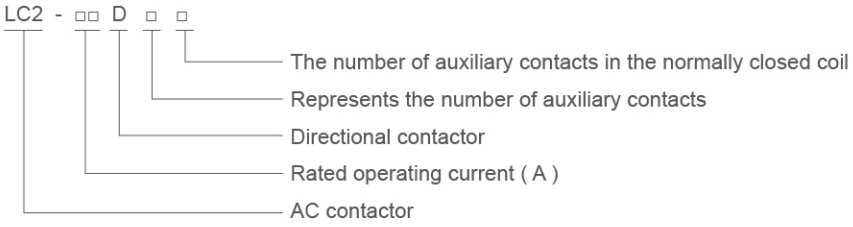
Communication contactor series

www.chmldq.com / www.mlele.com

Applicable scope

LC2-D series machine interlock contactors are suitable for using in AC 50/60Hz and rating insulation voltage 690-1000V, rating voltage 380V, rating current 9A-475A under AC-3, and control the positive and negative rotation of motor. Contactors conform with IEC60947-41, VDE0660GB14048.4 and etc.

Model and its meaning



The main technical parameters

Type	Rated current AC-3	Controlled power(kW)				
LC2-D09	9	2.2	4	4	4	5.5
LC2-D12	12	5.5	5.5	5.5	5.5	7.5
LC2-D18	16	7.5	7.5	9	9	10
LC2-D25	25	5.5	11	11	11	15
LC2-D32	32	7.5	15	15	15	18.5
LC2-D4011	40	18.5	18.5	22	22	30
LC2-D5011	50	15	22	25	30	33
LC2-D6511	63	18.5	30	37	37	37
LC2-D8011	80	22	37	45	45	45
LC2-D9511	95	22	45	45	45	41

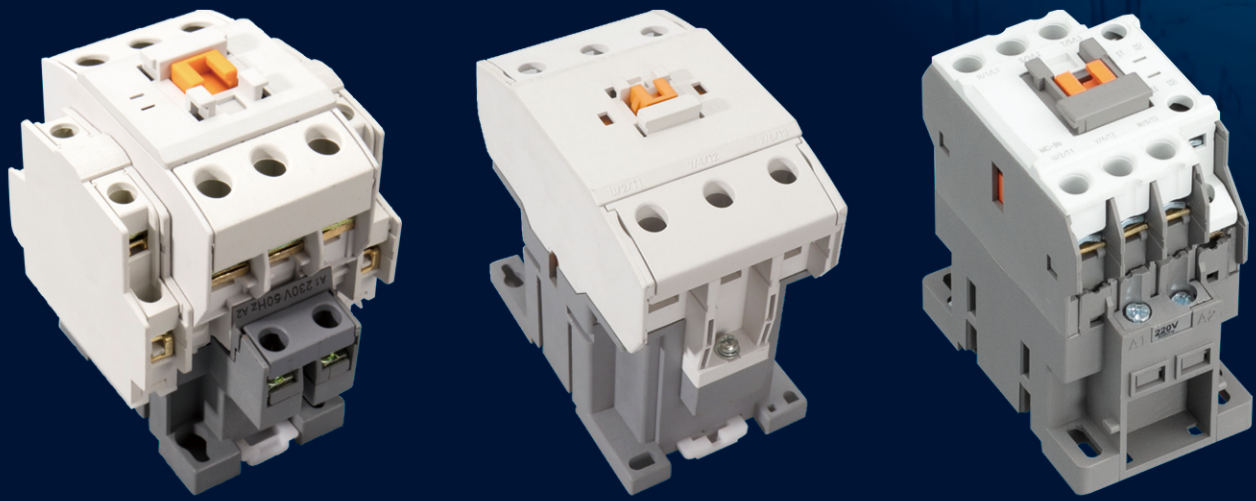
Normal working conditions and installation conditions

- The ambient air temperature is: -5℃ ~ +40℃ , 24hours its average does not exceed +35℃ .
- Elevation: no more than 2000 meters.
- Atmospheric conditions: At+40℃ when the relative humidity of not more than 50%,at a lower temperature can have a higher relative humidity
- Pollution Level: 3 level.
- Installation category: III category.
- Installation Conditions: the installation surface and the vertical slope of more than ± 50°.
- Shock Vibration : The product should be installed and used where there is no significant shaking, shock and vibration.

MLELE

GMC(LS)

Series AC contactor



Communication contactor series

www.chmldq.com / www.mlele.com

Applicable scope

GMC(LS) series AC contactors are latest products in 1990's. The series of products for frequency of 50/60Hz, rated insulation voltage up to 690-1000V,rated operational current up to 9A-400A at rated operational voltage up to 380V under AC-3. GMC Series AC Contactors are mainly used for making breakin electric circuits at a long istance and for frequent starting stopping and reversing control of AC motors.

Products comply with IEC947. VDE0660, GB14048.

Model and its meaning

GMC (LS) - □□ / □□

- Nos of auxiliary contact, digit indication
  - 20 means 2 NO, 11 means 1NO and1NC; 02 means 2 NC(these for 25A~43A);
  - 21 means 2NO and 1NC; 12 means 1NO and 2 NC(these for 63A~95A)
- Basic design code, nominal thermal current
- Design code
- AC contactor

The main technical parameters

Type				LS-09	LS-12	LS-18	LS-22
IEC-60947	AC capability			20A	20A	25A	32A
	AC capability		200~240V	2.5KW11A	3.5KW13A	4.5KW18A	5.5KW22A
			380~440V	4KW9A	5.5KW12A	7.5KW18A	11KW228A
			500~550V	4KW7A	7.5KW12A	15KW13A	15KW22A
			690V	4KW5A	7.5KW9A	15KW9A	15KW189A
	Conventional thermal current			20A	25A	30A	32A
	AC motor	Single phase	115V	0.5HP	0.5HP	1HP	2HP
			230V	1HP	2HP	3HP	3HP
			200V	2HP	3HP	5HP	7HP
		Three phase	230V	2HP	3HP	5HP	7.5HP
			460V	5HP	7.5HP	10HP	10HP
			575V	7.5HP	10HP	15HP	15HP
Auxiliary contactor	Side install			AU-1	AU-1	AU-1	AU-1
	Top install			AU-2.AU-4	AU-2.AU-4	AU-2.AU-4	AU-2,AU-4
Instal l way				bar/screw			
Shape dimension(mm)				44×80×86.8			
Installation size(mm)				30~35×48~59 35×60			

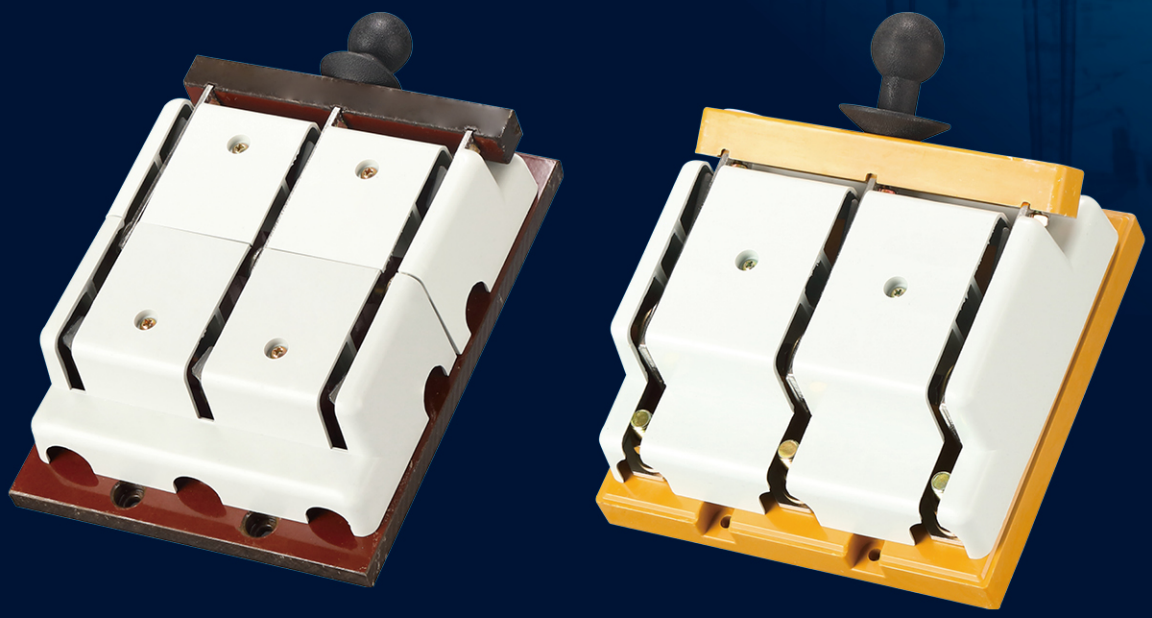
Normal working conditions and installation conditions

- The ambient air temperature is: -5℃ ~ +40℃ , 24hours its average does not exceed +35℃ .
- Elevation: no more than 2000 meters.
- Atmospheric conditions: At+40℃ when the relative humidity of not more than 50 % , at a lower temperature can have a higher relative humidity, the wettest month average minimum temperaturedoes not exceed +25℃ , the average monthly maximum relative Humidity does not exceed 90%. And consider the occurrence of temperature due to condensation on the product.
- Pollution Level: 3 level.
- Installation category: III category.
- Installation Conditions: the installation surface and the vertical slope of more than ± 50°.
- Shock Vibration: The product should be installed and used where there is no significant sha-king,shock and vibration.

MLELE

HD、HS

Open knife switch



Knife switch series

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Scope of application

HD series open knife switch and HS series knife type conversion switch (hereinafter referred to as knife switch) are suitable for complete power distribution equipment with AC 50Hz, rated voltage AC 380V, DC 220V, and a specified heating current up to 4000A. Knife switches with arc extinguishing chambers are used for manual infrequent connection and disconnection of load circuits, while knife switches without arc extinguishing chambers are only used for electrical isolation. The knife switch has a simple structure and easy operation, complying with IEC60947-3 and GB/T14048.3 standards.

The HD11 and HS11 series central handle knife switches are mainly used in power stations to not cut off circuits with current, and are used for electrical isolation.

The HD12 and HS12 series side front lever operated knife switches are mainly used in switch cabinets for front operation and maintenance. The operating mechanism is installed on both sides of the switch cabinet.

The HD13 and HS13 series central front lever operated knife switches are mainly used in switchgear for front operation and rear maintenance. The operating mechanism is installed in front of the switchgear.

The HD14 and HS14 series side operated handle knife switches are mainly used in power boxes.

Model and meaning

H□ □ □ - □ / □ □

HD11, HS11 knife switch:
8: Pre board wiring
9: Rear wiring of the board
HD12-14, HS12-14 knife switch:
0: Without arc extinguishing chamber
1: Equipped with arc extinguishing chamber
Number of poles: 2 poles, 3 poles, 4 poles
Agreed heating current
HD11, HS11 knife switch:
F: Protective type (with protective cover)
FA: Error proof type (with protective plate)
HD13, HS13 knife switch:
B: Improved base plate type
BX: with BX rotary handle
Design code:
11: Central handle type
12: Lateral positive lever operating mechanism type
13: Central front lever operating mechanism
14: Side operating handle type
HD: Open knife switch (single throw)
HS: Knife type conversion switch (double throw)

Structure characteristics

1. The knife switch 200400A adopts a single blade, 60010001500A adopts double blades, and 200030004000A adopts two sets of double blades in parallel. All blades are equipped with on-chip springs on both sides to obtain contact pressure, and the blades, connecting plates, and contacts are all tin plated to strengthen surface protection and improve contact resistance during wire connection.

2. The lever transmission mechanism type knife switch is equipped with an arc extinguishing chamber to ensure safety and reliability when disconnecting the load circuit. The arc extinguishing chamber is made of phenolic laminated cardboard and metal arc extinguishing grid, which greatly enhances the arc extinguishing ability of the knife switch.

3. The central front lever driven knife switch, in order to facilitate the design and installation of the switch board, has the same longitudinal installation dimensions from 200-4000A.

4. The knife switch adopts a unified type of transmission mechanism, with reliable positioning device and obvious opening and closing indication signs.

5. The installation base plate of the knife switch has two types: glass plate and rubber plate. The glass plate is made of phenolic glass fiber molded plastic, and the rubber plate is made of phenolic laminated cardboard, both of which have good mechanical strength and dielectric properties.

Main technical parameters

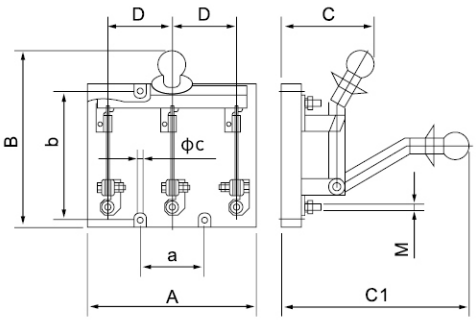
Agreed heating current Ith	100A	200A	400A	600A	1000A	1500A	2000A	3000A	4000A
Rated insulation voltage Ui	660V								
Rated working voltage Ue	AC380V、DC220V								
Rated frequency	50Hz								
Usage category	AC-20、AC-23								
Rated connection capacity (r.m.s)	1kA	2kA	4kA	6kA	10kA	15kA	20kA	30kA	/
Rated breaking capacity (r.m.s)	0.8kA	1.6kA	3.2kA	4.8kA	8kA	12kA	16kA	24kA	/
Is short-time withstand current (r.m.s)	4kA	4kA	8kA	15kA	30kA	35kA	50kA	60kA	80kA
Mechanical lifespan (number of operating cycles)	10000	10000	10000	5000	5000	3000	2000	1000	500
Electrical lifespan (number of on-off cycles)	1000	1000	1000	800	800	500	300	200	100
Operating force F	≤200N	≤250N	≤250N	≤350N	≤400N	≤450N	≤500N	≤600N	≤800N

Note: The rated connection and disconnection capacity and usage category AC-23 are only available with arc extinguishing chamber and switch

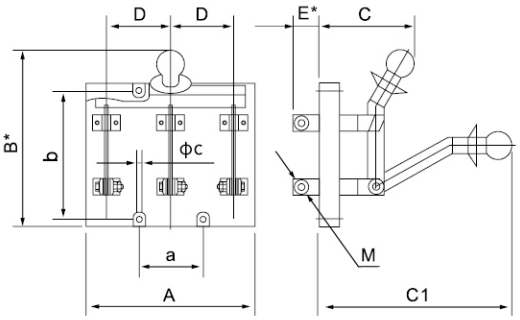
Appearance and installation dimensions

1. HD11 series appearance and installation dimensions

HD11/8 (Front Board) Series



HD11/9 (Behind Board) Series

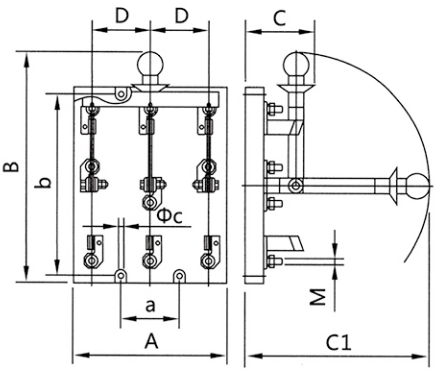


Product Model		Dimensions (mm)						Installation size (mm)			Terminal size (mm)	
		A	B/B*	C	C1	D	E*	a	b/b*	φc	Section	M
HD11MA-100（F）	/2	90	205/205	110	220	70	32	120	140/140	7	3.5x24.5	M8
	/3	190	205/205	110	220	70	32	50	140/140	7		
	/4	265	230/230	118	238	70	32	100	140/140	7		
HD11MA-200（F）	/2	150	205/205	110	220	70	32	120	140	7	3.5x24.5	M8
	/3	190	205/205	110	220	70	32	70	140	7		
	/4	265	230/230	118	238	70	32	140	140	7		
HD11MA-400（F）	/2	190	265/265	132	270	80	43	160	190	7	4.2x36.5	M12
	/3	220	265/265	132	270	80	43	80	190	7		
	/4	300	272/272	130	265	80	43	160	190	7		
HD11MA-600（F）	/2	240	325/270	112	305	100	55	200	140	9	7x39	M16
	/3	270	325/270	112	305	100	55	100	140/220	9		
	/4	340	325/270	112	305	100	55	180	140	9		
HD11MA-1000（F）	/2	270	382/322	118	355	120	70	240	140	9	8.5x49	2-M12
	/3	325	382/322	118	355	120	70	115	140/260	9		
	/4	430	382/322	118	355	120	70	240	140	9		
HD11MA-1500（F）	/2	300	410/330	128	364	130	85	260	140	11	9x69.5	4-M12
	/3	350	410/330	128	364	130	85	130	140/300	11		
	/4	480	410/330	128	364	130	85	260	140	11		
HD11-2000	/2	400	382/322	118	355	120	70	360	140	11	9×100	4-M12
	/3	480	382/322	118	355	120	70	180	140/260	11		
	/4	660	382/322	118	355	120	70	360	140	11		

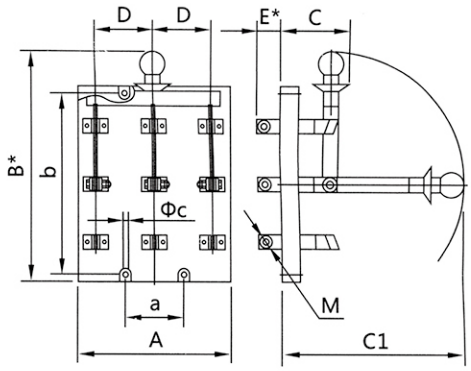
Note: The dimensions marked with * are the dimensions of the rear panel type

2.HS11 series appearance and installation dimensions

HS11/8 (Front Panel) Series



HS11/9 (Behind Board) Series



Product Model		Dimensions (mm)						Installation size (mm)			Terminal size (mm)	
		A	B/B*	C	C1	D	E*	a	b	φc	Section	M
HS11MA-100 (F)	/2	90	285/285	90	225	70	32	120	220	7	3.5x24.5	M8
	/3	190	285/285	90	225	70	32	70	220	7		
	/4	265	305/305	80	245	70	32	140	220	7		
HS11MA-200 (F)	/2	150	285/285	90	225	70	32	120	220	7	3.5x24.5	M8
	/3	190	285/285	90	225	70	32	70	220	7		
	/4	265	305/305	80	245	70	32	140	190	7		
HS11MA-400 (F)	/2	190	365/365	110	290	80	43	160	280	7	4.2x36.5	M12
	/3	220	365/365	110	290	80	43	80	280	7		
	/4	290	375/375	85	290	80	43	160	280	7		
HS11MA-600 (F)	/2	240	405/350	110	300	100	55	200	220	9	7x39	M16
	/3	270	405/350	88	300	100	55	100	220	9		
	/4	340	405/350	88	300	100	55	180	220	9		
HS11MA-1000（F）	/2	270	510/450	118	350	120	70	240	220	9	8.5x49	2-M12
	/3	325	510/450	118	350	120	70	115	220	9		
	/4	430	510/450	118	350	120	70	230	220	9		
HS11MA-1500（F）	/2	300	580/500	128	360	130	85	220	260	11	9x69.5	4-M12
	/3	350	580/500	128	360	130	85	130	220	11		
	/4	490	580/500	128	360	130	85	260	220	11		

Note: The dimensions marked with * are the dimensions of the rear panel type

MLELE

HR17

Fuse switch disconnector

Isolation switch series

www.chmldq.com / www.mlele.com

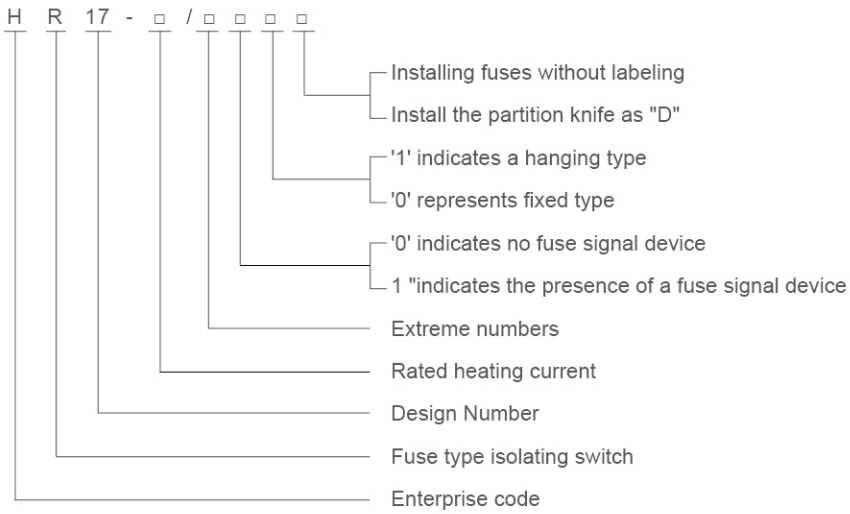
Product Overview

The HR17 series fuse type isolating switch has a rated insulation voltage of AC 800V, rated working voltages of 690V and 400V, rated frequency of 50Hz, and rated working current of 160A~630A. It is mainly used in distribution circuits and motor circuits with high short circuits, as a power switch, isolation switch, and emergency switch, and for circuit protection. This switch is not intended to directly open or close a single motor.

When the isolation switch replaces the fuse with an isolation knife, the switch does not have current overload and short circuit protection functions, only meets the rated connection and disconnection capabilities specified by the switch, and is used for line isolation.

This product complies with the GB/T14048.3-2002 and IEC60949-3 (1999) standards.

Model and meaning



Product Features

This isolation switch is a three pole fully insulated enclosed structure, and the entire shell is molded with high-strength flame-retardant materials, which have good insulation protection performance. The operating handle is located above the cover, ensuring safe and reliable use, and easy and effortless operation.

The switch cover has a transparent panel that allows for observation of the internal working status. The switch cover can be easily removed, and the fuse link is hung on the cover for easy replacement. When the isolation switch is disconnected, a clear fracture can be seen.

The design standard for the contact system of the switch is that when the switch is disconnected with a load, the current will automatically transfer to the arc angle, and a sophisticated arc extinguishing chamber will be used to ensure reliable disconnection of the switch, with minimal erosion of the contact surface and stable operation of the switch.

The structure of switches can be divided into fixed and hanging types according to installation methods. When hanging type installation is used, the power supply is directly introduced into the switch inlet through the bottom of the switch from the standard row installed horizontally. Hanging type installed switches have the characteristic of quick replacement as a whole. When fixed installation is used, the switch inlet and outlet terminals can be connected to the busbar, and with dedicated wiring terminals, they can be directly connected to the cable.

The switch components adopt a plug-in combination structure for easy maintenance and repair. When a frame type or plastic shell type circuit breaker is installed at the load end of the switch as line protection, this switch can be used as an isolation switch by replacing the fuse with an isolation knife.

Main technical parameters

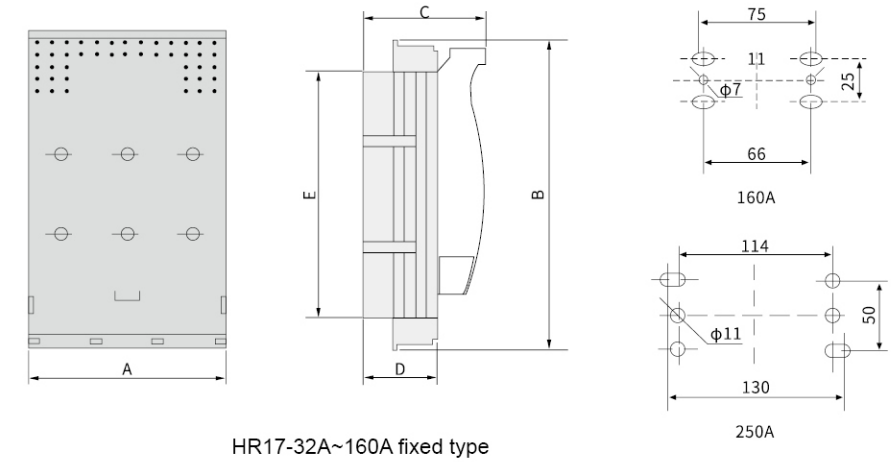
Rated insulation voltage	AC 800V			
Rated working voltage	AC 400V AC 690V			
Agreed heating voltage	160A、250A、400A、630A			
Rated working current	400V	160A、250A、400A、630A	690V	100A、200A、315A、425A
Usage category	400V	AC-20B、AC-21B、AC-22B、AC-23B	690V	AC-20B、AC-21B、AC-22B
Equipped with fuse links	The fuse link should comply with the GB13539.1 standard, and the relationship between the switch and the fuse link is shown in Table 2.			
Withstand impulse voltage	Phase to phase and relative to ground 12KV; 15KV between each phase fracture			
Rated limit short-circuit current	When the switch is equipped with a fuse that meets the standard, the rated short-circuit withstand and short-circuit of the switch; The connection capability is 50KA under the conditions of AC690V and COS φ=0.2			
Operational performance	The number of operating cycles and the parameters of the operating performance test circuit are shown in Tables 3 and 4			

Rated current (A)	Number of operation cycles			Number of operation cycles per hour
	Carrying idler	On load	Total	
160、250	1400	200	1600	120
400、630	800	200	1000	60

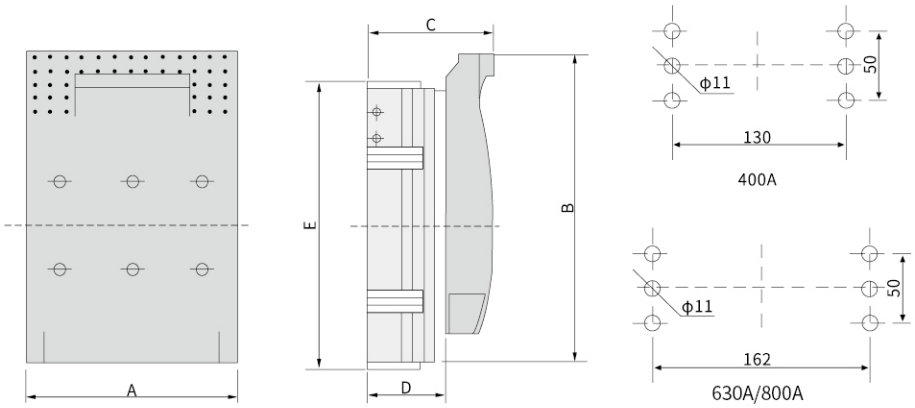
Rated voltage (V)	Rated working current (V)	Utilization category	Put through			Breaking		
			I/Ie	U/Ue	COSφ	I/Ie	U/Ue	COSφ
400	All values	AC-21B	1	1	0.95	1	1	0.95
		AC-22B			0.8			0.8
		AC-23B			0.65			0.65
690	All values	AC-21B	1	1	0.95	1	1	0.95
		AC-22B			0.8			0.8

Switch appearance and installation dimensions

HR17-32A~630A Fixed External Installation Dimensions



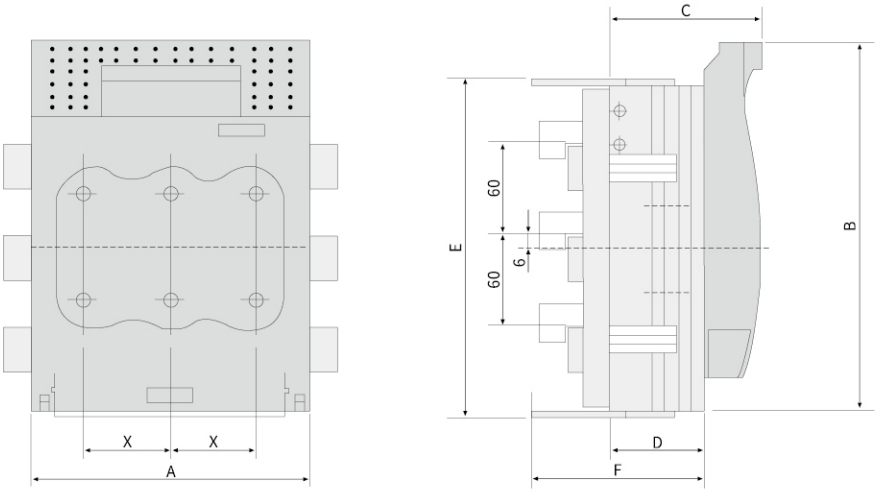
HR17-32A~160A fixed type



HR17-250A~800A fixed type

Product Model		Dimensions (mm)						Installation size (mm)	
		A	B	C	D	E	a	b	φC
HR17B-40	2 Pole	55	116	76	150	21	21	/	φ6
	3 Pole	76	116	76	150	21	43	/	φ6
HR17B-63	2 Pole	74	120	76	150	31	31	/	φ6
	3 Pole	105	120	76	150	31	62	/	φ6
HR17B-160	3 Pole	106	200	83	205	33	68	25	φ7
HR17B-250	3 Pole	185	247	110	295	57	114	50	φ11
HR17B-400	3 Pole	210	290	125	340	65	130	50	φ11
HR17B-630	3 Pole	256	300	145	360	81	167	50	φ11
HR17B-800	3 Pole	256	300	145	360	81	167	50	φ11

HR17-160A~630A hanging type external installation dimensions



HR17-160A~630A Hanging type

Model	External dimensions and installation dimensions					
	A	B	C	D	E	F
HR17-160/301	106	200	97	59.5	200	87
HR17-250/301	184	243	128.5	88	221	110.5
HR17-400/301	210	288	145	97	268	124.5
HR17-630/301	256	300	159.5	111.5	285	139

HR17 series fuse type isolation switch with optional fuse link model

Switch agreement heating current(A)	Rated working voltage(V)	Rated working current(V)	Fuse model	Can accommodate melt current value (A)
160	400	160	0	4,6,10,16,20,25,32,36,40, 50,63,80,100,125,160
	690	100		4,6,10,16,20,25,32, 36,40,50,63,80,100
250	400	250	1	80,100,125,160, 200,225,250
	690	200		80,100,125,160,200
400	400	400	2	125,160,200,225,250, 300,315,355,400
	690	315		125,160,200,225, 250,300,315
630	400	630	3	315,355,400,425,500,630
	690	425		315,355,400,425

MiLELE

HGL

Isolation switch

Isolation switch series

www.chmldq.com / www.mlele.com

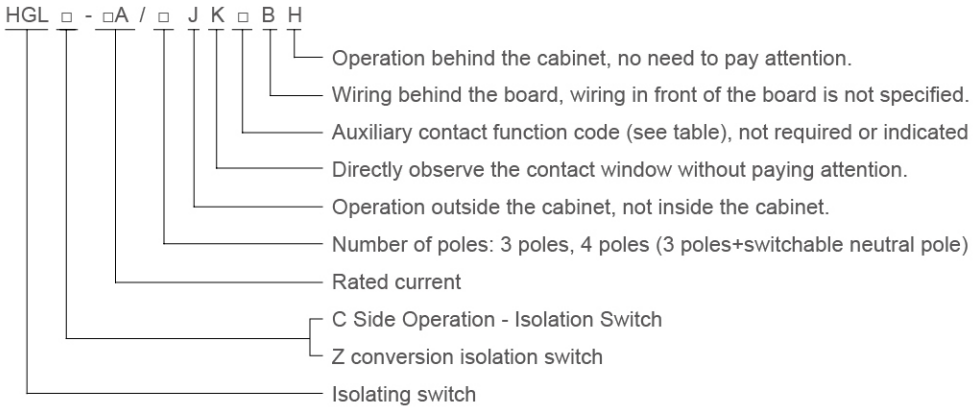
Product Overview

The HGL series isolating switch is divided into 13 specifications from 63-3200A and is a modular design basic type. It has three poles and four poles (three poles+switchable neutral pole), suitable for circuit and connection and disconnection or electrical isolation. It is only used for electrical isolation above 1000A.

There is a marking window on the front to indicate the on/off status of the contacts.

According to the needs, a rear observation window can be provided to directly observe the on/off status of the contacts. The window style can be seen in HGL-125-1600NH cabinet rear operation load isolation switch.

Model and its meaning



One normally open and one normally closed	11	NO+NC
Two normally open and two normally closed	22	2NO+2NC

Example of selection: rated current 630A, with neutral pole conversion isolation switch, HGL-630A/4J for operation outside the cabinet.

Normal usage condition

- Altitude not exceeding 2000 meters;
- The ambient temperature should not exceed 40 °C and should not be lower than -5 °C ;
- Relative humidity not exceeding 95%;
- Non explosive hazardous medium environment;
- No rain or snow invasion environment.

Note: If it is expected to be suitable for conditions where the ambient air temperature is above+40°C or below -5°C ~-45°C , the user should inform the manufacturer when placing an order.

Operating mode

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

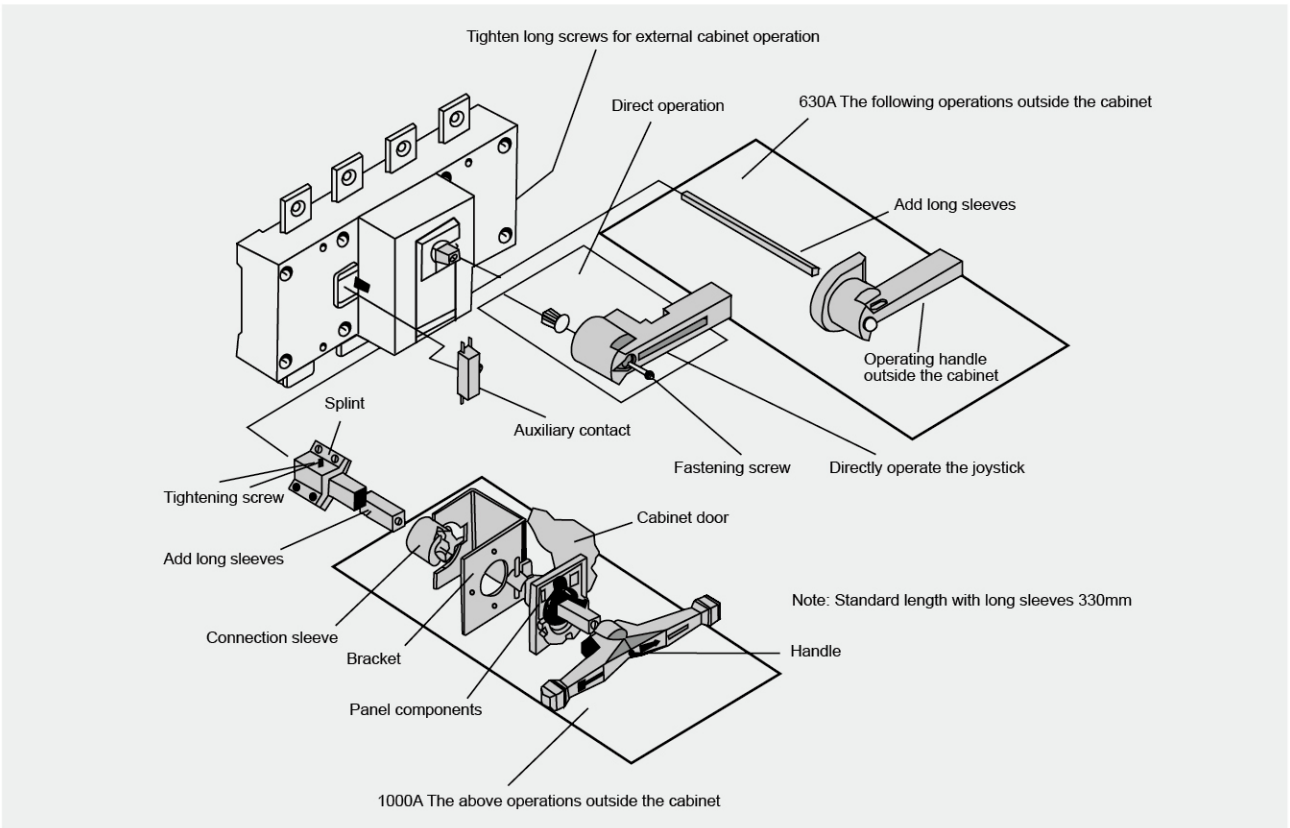
External operation: The handle is installed outside the distribution cabinet door.

Can be equipped with two sets of auxiliary contacts.

Main technical parameters

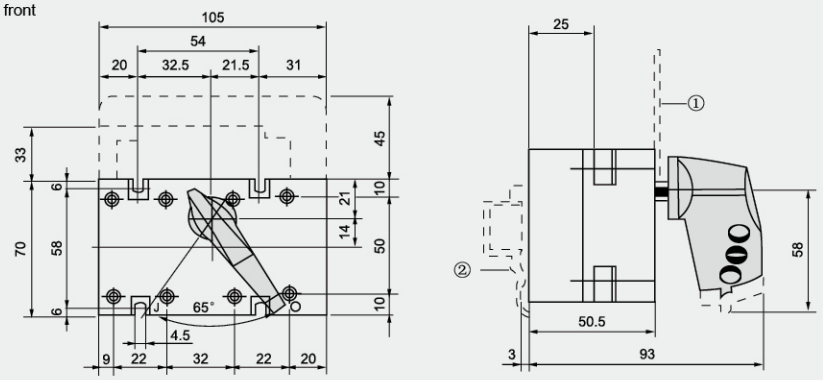
Agreed heating current Ith (A)		63A	100A	160A	250A	400A	630A	800A	1000A	1250A	1600A	2000A	2500A	3200A
Rated insulation voltage Ui		750V		800V	1000V									
Dielectric strength		3000V			3500V									
Rated impulse withstand voltage Uimp		6kV		8kV	12kV									
Rated working voltage Ue		AC400, 600V												
Rated frequency		50Hz												
Usage category		AC-21、22、23												
AC400V	AC-21	63	100	160	250	400	630	800	1000	1250	1600	2000	2500	3150
	AC-22	63	100	160	250	400	630	800	1000	1250	1600	2000	2500	3150
Rated working current Ie (A)	AC-23	50	80	160	250	400	630	800	800	1000	1250	1250	2000	2500
AC660V	AC-21	63	100	160	250	400	630	800	1000	1250	1600	2000	2500	3150
	AC-22	63	80	100	200	315	400	630	630	630	800	1000	1000	1250
	AC-23	40	63	63	125	200	250	250	250	400	500	/	/	/
Rated connection capacity (A)		10Ie												
Rated breaking capacity (A)		8Ie												
Rated short-circuit making capacity Icm (kA)		1.7	1.7	12	17	30	40		70			70		
Is short-time withstand current Icw (kA)		3	3	10	12	20	25		50			50		
Mechanical lifespan (times)		5000	5000	5000		3000			2000			1000		
Electrical lifespan (times)		1000	1000	1000		600			300			/		
Operating force matrix (N · m)		3.5	3.5	65	10	15			27			60		
Weight kg (excluding handle)	3 Poles	0.32	0.39	0.88	1.6	3.8	4.2		10.5	10.5	16	31	31	42
	4 Pole	0.34	0.41	1.1	2	4.6	5		13	13	20	40	40	49

Appearance and installation dimensions

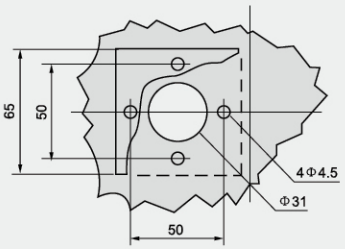


HGL-40~63A series isolation switch appearance and installation dimensions

Direct operation from the front

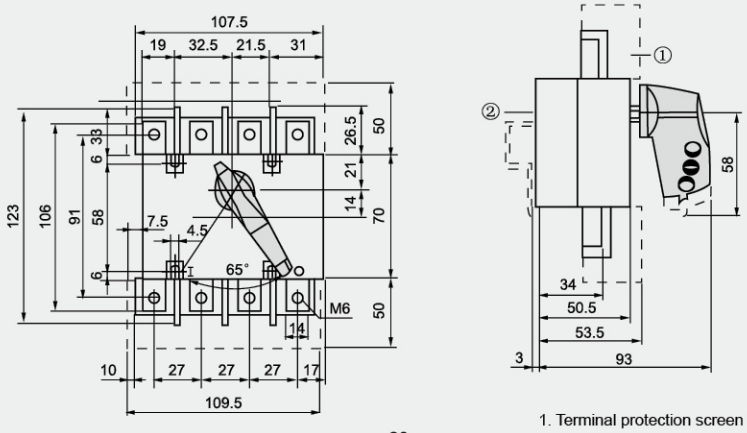


Front cabinet external operation installation hole



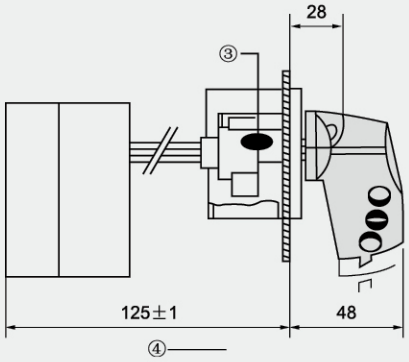
HGL-80~100A series isolation switch appearance and installation dimensions

Direct operation from the front



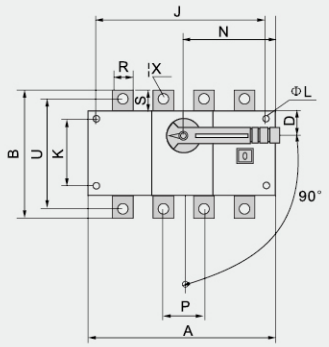
1. Terminal protection screen
2. Clamp for fixing DIN rail

Front cabinet external operation

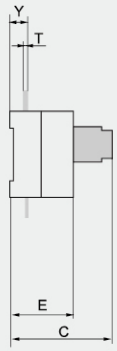


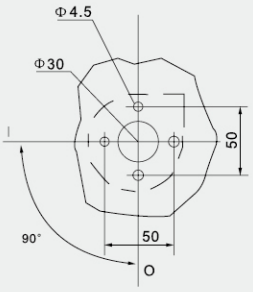
3. Sliding tongue width of handle lock 30mm
4. Minimum length with extended coupling: 125 ± 1

HGL-125~630A series isolation switch appearance and installation dimensions

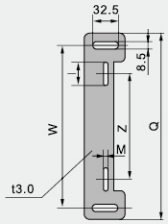


HGL-125-630 Direct operation

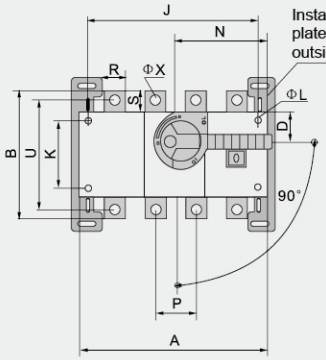


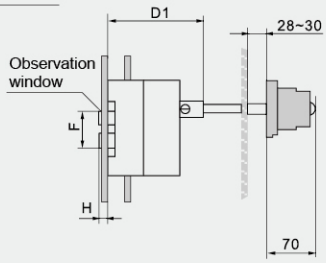


Installation dimensions of handle holder outside the cabinet



Installation of bottom plate for operation outside the cabinet



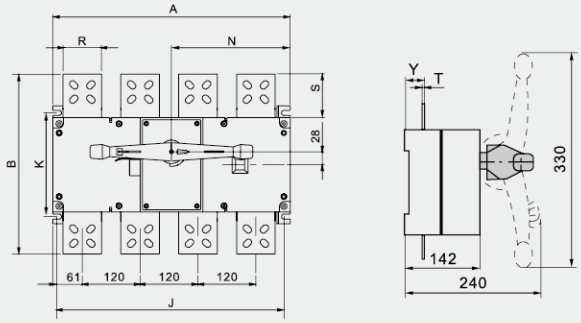


HGL-125~630/VJK cabinet external operation

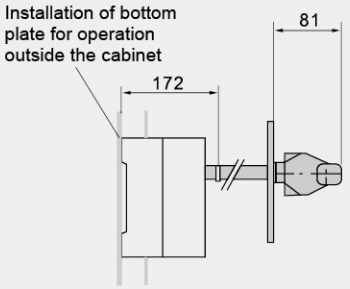
Specifications	Plate size				
	I	M	Z	W	Q
HGL-125A	55	5.5	85	190	218
HGL-160A	55	5.5	85	190	218
HGL-200A	55	5.5	85	190	218
HGL-250A	55	5.5	85	190	218
HGL-315A	60	6.5	130	240	270
HGL-400A	60	6.5	130	240	270
HGL-500A	60	6.5	130	240	270
HGL-630A	60	6.5	130	240	270

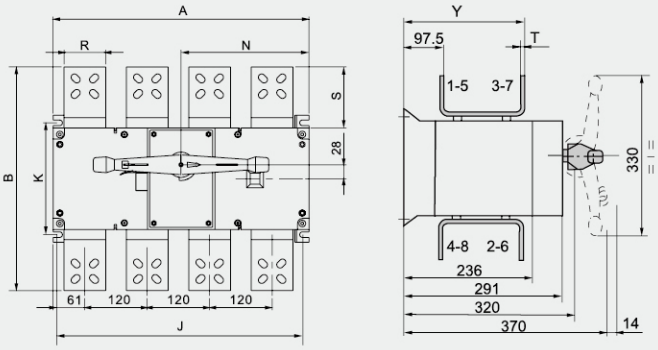
Specifications	External dimensions and installation dimensions																		
	A	B	C	D	D1	E	ΦL	J	K	N	P	R	S	T	U	ΦX	Y	F	H
HGL-125A/3	140	135	120	27	93	73	5.5	120	65	85	36	20	25	3.5	115	9	24	49	10
HGL-125A/4	170	135	120	27	93	73	5.5	150	65	85	36	20	25	3.5	115	9	24	49	10
HGL-160A/3	140	135	120	27	93	73	5.5	120	65	85	36	20	25	3.5	115	9	24	49	10
HGL-160A/4	170	135	120	27	93	73	5.5	150	65	85	36	20	25	3.5	115	9	24	49	10
HGL-200A/3	180	165	140	35	103	86	7	160	90	115	50	25	28	3.5	140	11	25	79	15
HGL-200A/4	230	165	145	35	103	86	7	210	90	115	50	25	28	3.5	140	11	27	79	15
HGL-250A/3	180	165	140	35	103	86	7	160	90	115	50	25	28	3.5	140	11	25	79	15
HGL-250A/4	230	165	145	35	103	86	7	210	90	115	50	25	28	3.5	140	11	27	79	15
HGL-315A/3	230	234	170	50	134	116	7	210	140	145	65	32	37	5	205	11	37	94	20
HGL-315A/4	290	234	170	50	134	116	7	270	140	145	65	32	37	5	205	11	37	94	20
HGL-400A/3	230	234	170	50	134	116	7	210	140	145	65	32	37	5	205	11	37	94	20
HGL-400A/4	290	234	170	50	134	116	7	270	140	145	65	32	37	5	205	11	37	94	20
HGL-500A/3	230	250	170	50	134	116	7	210	140	145	65	40	45	6	215	12.5	38	94	20
HGL-500A/4	290	250	170	50	134	116	7	270	140	145	65	40	45	6	215	12.5	38	94	20
HGL-630A/3	230	250	170	50	134	116	7	210	140	145	65	40	45	6	215	12.5	38	94	20
HGL-630A/4	290	250	170	50	134	116	7	270	140	145	65	40	45	6	215	12.5	38	94	20

HGL-1000~3150A series load isolation switch appearance and installation dimensions

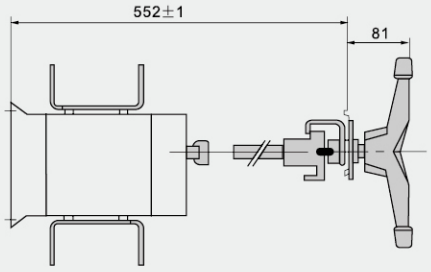


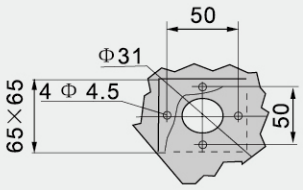
HGL-1000~1600A Direct operation



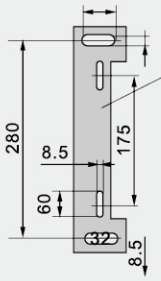


HGL-2000~3150A Front direct operation





Installation dimensions
of handle holder outside
the cabinet



HGL-1000~1600A
Installation of bottom plate
for operation outside the cabinet

Specifications	External dimensions and installation dimensions								
	A	B	J	K	N	R	S	T	Y
HGL-1000A/3	378	328	352	175	185.5	60	64	8	48
HGL-1000/V4	492	328	467	175	246	60	64	8	48
HGL-1250/V3	378	336	352	175	185.5	80	68	8	48
HGL-1250A/4	492	336	467	175	246	80	68	8	48
HGL-1600A/3	378	336	352	175	185.5	80	68	10	49
HGL-1600A/4	492	336	467	175	246	80	68	10	49
HGL-2000/V3	379	423	352	220	185.5	80	111.5	10	210.5
HGL-2000A/4	492	423	467	220	246	80	111.5	10	210.5
HGL-2500/V3	378	433	352	220	185.5	80	116.5	15	215.5
HGL-2500A/4	492	433	467	220	246	80	116.5	15	215.5
HGL-3150/V3	378	443	352	220	185.5	80	121.5	20	220.5
HGL-3150A/4	492	443	467	220	246	80	121.5	20	220.5

MLELE

MLPV-30 1000Vdc/1500Vdc

Fuse support/base

Fuse series

www.chmldq.com / www.mlele.com

Specifications

- Rated voltage: 1000Vdc / 1500Vdc
- Rated current: 30A

Standard

- IEC60269-6
- UL4248-19
- EN60947-3

Typical application

- PV combiner box

Product features

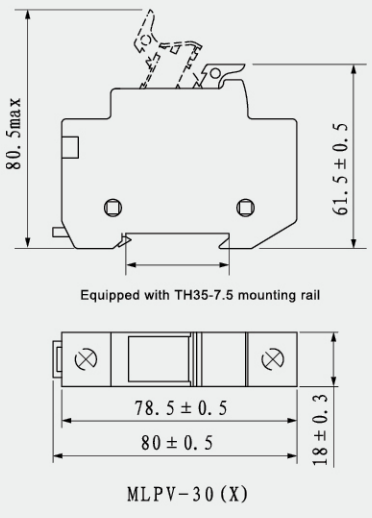
- Imported nylon material, V0 flame retardant, high and low temperature resistance
- ≥24h salt spray test, resistance to acid environment
- Silver-plated copper terminal blocks, low temperature rise

Typical application

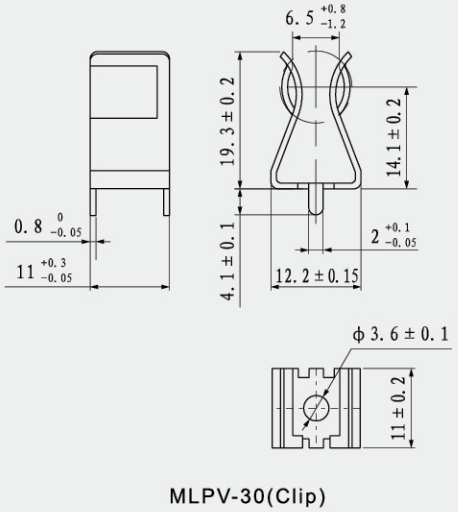
Product code	Rated current	Breaking capacity	Safety certificate			Fitted with fuse-link model size	Net weight
			△	CE	VL		
MLPV-30	30A	1000Vdc 1500Vdc	●	●	●	MLPV-30 (S) (Φ10.3x38)mm	58.5g
MLPV-30X	30A		●	●	○		61.5g
MLPV-30 (Clip)	30A	1500Vdc	○	○	○		3.7g

Note: ● Denotes for certification approved ; ○Denotes for pending certification

Product size (mm)



MLPV-30(X)



MLPV-30(Clip)

Note: This base can provide 1P, 2P, 3P, 4P for selection