YCM8-□PV Photovoltaic DC MCCB

General

YCM8-□PV series photovoltaic special DC molded case circuit breaker is applicable to DC power grid circuits with rated voltage up to DC1500V and rated current 800A. The DC circuit breaker has overload long delay protection and short circuit instantaneous protection functions, which are used to distribute electric energy and protect the line and power supply equipment from overload, short circuit and other faults.

Features

- Ultra-wide breaking capacity:
  rated working voltage up to DC1500V and rated current up to 800A. Under DC1500V working conditions, Icu=Ics=20KA, ensuring reliable short-circuit protection.
- Small size:
  for frame currents up to 320A, the 2P rated working voltage can reach DC1000V, and for frame currents of 400A and above, the 2P rated working voltage can reach DC1500V.
- Ultra-long arc-extinguishing chamber:
  the arc-extinguishing chamber has been improved as a whole, with more arc-extinguishing plates, greatly improving the product's breaking characteristics.
- Application of narrow-slot arc-extinguishing technology:
  advanced current-limiting and narrow-slot arc-extinguishing technology is applied, which enables the high voltage and high short-circuit current to be cut off very quickly, facilitating the extinguishing of the arc in the shortest possible time, effectively limiting the energy and current peak, and greatly reducing damage to cables and equipment caused by short-circuit currents.

Selection

YCM8	–	250	S	PV	/	3	125A	DC1500
Model		Shell frame current	Breaking capacity	Product type		Number of poles	Rated current	Rated voltage
YCM8		125(50~125) 250(63~250) 320(250~320) 400(225~400) 630(400~630) 800(630~800)	S: Standard breaking N: Higher breaking	PV: Photovoltaic/ direct-current		2 3	50, 63, 80, 100, 125, 140, 160, 180, 200, 225, 250, 280, 315, 320, 350, 400, 500, 630, 700, 800	DC500 DC1000 DC1500

Note: The tripping type of this product is thermal-magnetic type

The working voltage of YCM8-250/320PV 2P is DC1000V; The working voltage of 3P is DC1500V; YCM8-400/630/800PV 2P and 3P can work under DC1500.

Accessory selection

YCM8	–	MX	1	AC230V	
Model		Accessories	Adapter shell frame	Accessory voltage	
YCM8		OF: Auxiliary contact MX: Shunt release SD: Alarm module Z: Manual operation mechanism P: Electric operating mechanism TS2: Terminal shield 2P TS3: Terminal shield 3P	0: 125 1: 250/320/ 2: 400/630/800	MX: AC110V AC230V AC400V DC24V DC110V DC220V	P: AC400V AC230V DC220V

Note: YCM8-125PV shell rack only has OF, MX, SD accessories

YCM8-□PV Photovoltaic DC MCCB

Technical data

Model		YCM8- 125PV		YCM8- 250PV			YCM8- 320PV		
Appearance									
Shell frame current Inm(A)		125		250			320		
Number of poles of products		2		2		3	2		3
DC working voltage(V)		250	500	500	1000	1500	500	1000	1500
Rated insulation voltageUi(V)		DC1000		DC1250		DC1500	DC1250		DC1500
Rated impulse withstand voltage Uimp(KV)		8		8		12	8		12
Rated current In(A)		50, 63, 80, 100, 125		63, 80, 100, 125, 140, 160, 180, 200, 225, 250			280, 315, 320		
Ultimate short-circuit breaking capacity Icu (kA)	S	40	40(5ms)	50	20	20	50	20	20
	N	/		/			/		
Running short-circuit breaking capacity Ics(kA)		Ics=100%Icu							
Wiring method		Up in and down out, down in and up out, Down in and up out, up in and down out(3P)							
Isolation function		Yes							
Tripping type		Thermal-magnetic type							
Electrical life(time)		5000	3000	3000	2000	1500	3000	2000	1500
Mechanical life(time)		20000		20000			20000		
Standard		IEC/EN60947-2							
Attached accessories		Shunt、Alarm、Auxiliary、Manual operation、Electric operation							
Certifications		CE							
Overall dimension (mm)	Width(W)	64		76		107	76		107
	Height(H)	150		180			180		
	Depth(D)	95		126			126		

Note: ① 2P connection in series, ② 3P connection in series

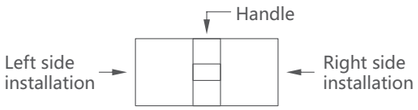
YCM8-□PV Photovoltaic DC MCCB

Technical data

Model		YCM8- 400PV				YCM8-630PV				YCM8- 800PV			
Appearance													
Shell frame current Inm(A)		400				630				800			
Number of poles of products		2			3	2			3	2			3
DC working voltage(V)		500	1000	1500	1500	500	1000	1500	1500	500	1000	1500	1500
Rated insulation voltageUi(V)		DC1500				DC1500				DC1500			
Rated impulse withstand voltage Uimp(KV)		12				12				12			
Rated current In(A)		225, 250, 315, 350, 400				400,500,630				630,700,800			
Ultimate short-circuit breaking capacity Icu (kA)	S	65	35	15	15① 20②	65	35	15	15① 20②	65	35	15	15① 20②
	N	70	40	20	20① 25②	70	40	20	20① 25②	70	40	20	20① 25②
Running short-circuit breaking capacity Ics(kA)		Ics=100%Icu											
Wiring method		Up in and down out, down in and up out, Down in and up out, up in and down out(3P)											
Isolation function		Yes											
Tripping type		Thermal-magnetic type											
Electrical life(time)		1000	1000	700	500	1000	1000	700	500	1000	1000	700	500
Mechanical life(time)		10000				5000				10000			
Standard		IEC/EN60947-2											
Attached accessories		Shunt、Alarm、Auxiliary、Manual operation、Electric operation											
Certifications		CE											
Overall dimension (mm)	Width(W)	124			182	124			182	124			182
	Height(H)	250				250				250			
	Depth(D)	165				165				165			

Note: ① 2P connection in series, ② 3P connection in series

Accessories



□ Alarm contact
■ Auxiliary contacts

● Shunt release
→ Lead line direction

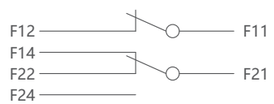
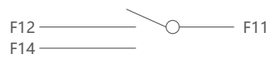
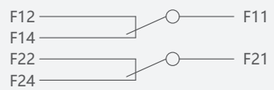
Accessory code	Accessory name	125PV	250/320PV	400/630/800PV
SD	Alarm contact			
MX	Shunt release			
OF	Auxiliary contact(1NO1NC)			
OF+OF	Auxiliary contact(2NO2NC)	—	—	
MX+OF	Shunt release+ Auxiliary contact(1NO1NC)			
OF+OF	2 sets of auxiliary contacts(2NO2NC)			—
MX+SD	Shunt release + Alarm contact	—	—	
OF+SD	Auxiliary contact + Alarm contact			
MX+OF+SD	Shunt release Auxiliary contact(1NO1NC)+ Alarm contact	—	—	
OF+OF+SD	2 sets of auxiliary contacts(2NO2NC)+Alarm contact			

Auxiliary contact

Auxiliary contact current parameters

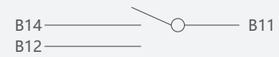
Rated current of shell frame grade	Agreed heating current Ith	The rated working current at AC 400V
Inm<320	3A	0.30A
Inm>400	6A	0.40A

Auxiliary contact and its combination

When the circuit breaker is in the "off" position	
	
When the circuit breaker is in the "on" position	
	

Alarm contact

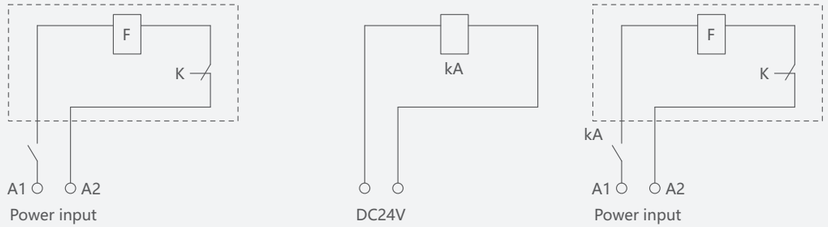
Alarm contact and its combination

Alarm contact Ue=220V, Ith=3A	
When the circuit breaker is in the "off"and "on"position	
When the circuit breaker is in the "free trip" position	

Shunt release

Generally installed in the Phase A of the circuit breaker, when the rated control power voltage is between 70% - 110%, the shunt release shall make the circuit breaker trip reliably under all operating conditions.
Control voltage: conventional: AC 50Hz, 110V, 230V, 400V, DC 24V, 110V, 220V.
Note: when the power supply of the control circuit is DC24V, the following figure is recommended for the design of the shunt control circuit.
KA: DC24V intermediate relay, contact current capacity is 1A
K: the microswitch in series with the coil inside the release aid is a normally closed contact. When the circuit breaker is disconnected, the contact will automatically disconnect and close when it is closed.

Wiring diagram

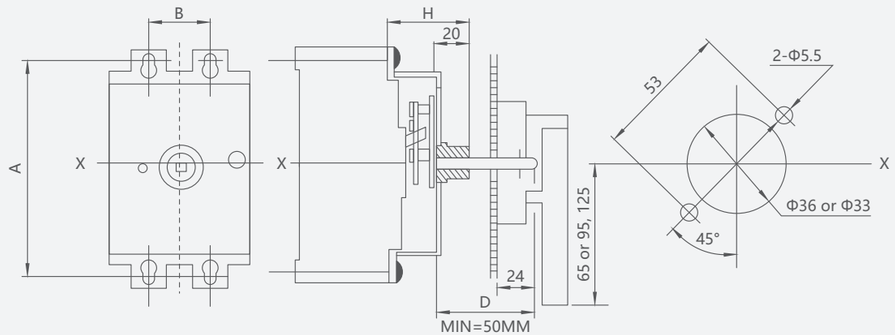


Installation method and overall dimension of external accessories

Model and specification of rotating operating handle mechanism

Model	Installation dimension(mm)				Central value of the operating handle relative to the circuit breaker(mm)
	A	B	H	D	
YCM8-250/320PV	157	35	55	50-150	0
YCM8-400/630/800PV	224	48	78	50-150	±5

Schematic diagram of hole opening of rotating operating handle

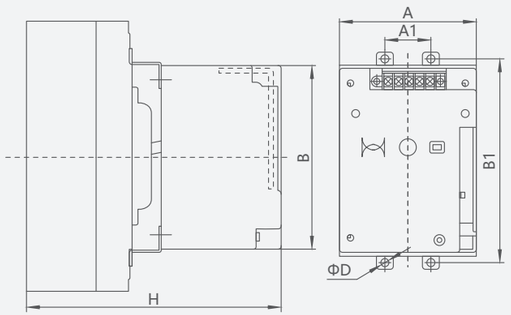


Overall and mounting dimension of external accessories

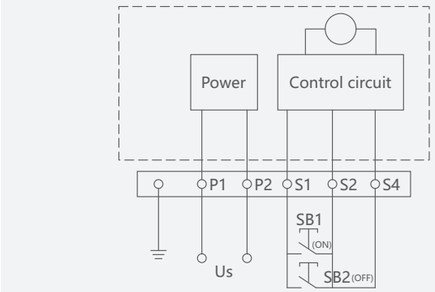
Model and specification of rotating operating handle mechanism

Model	H	B	B1	A	A1	D
YCM8-250/320PV	188.5	116	126	90	35	4.2
YCM8-400/630/800PV	244	176	194	130	48	6.5

Outline and installation dimension diagram of CD2

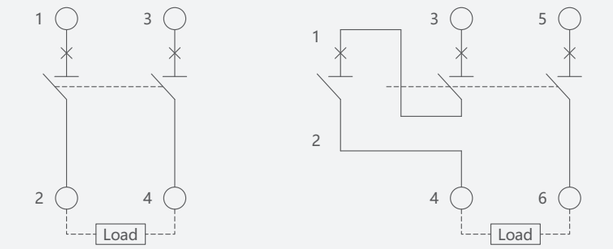


Wiring diagram



Symbol description:
SB1.SB2 operation button (provided by the user)
X terminal row
P1 and P2 are external power supply

Wiring diagram



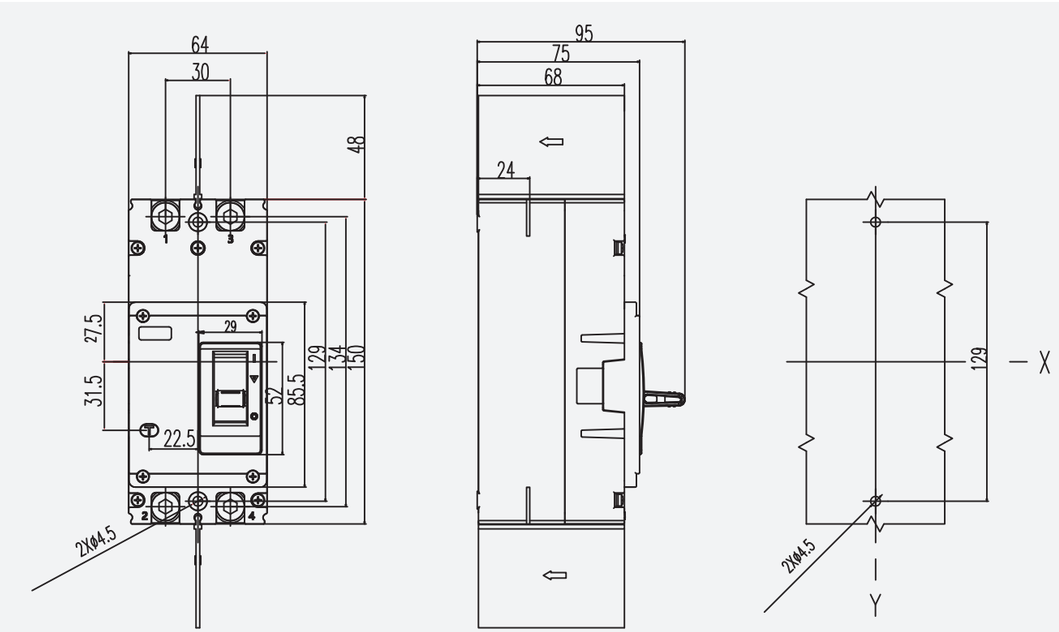
YCM8-250PV、320PV
2P DC1000V
YCM8-400PV、630PV、800PV
2P DC1500V

YCM8-250PV、320PV
3P DC1500V

YCM8-400PV、630PV、800PV 3P
(Make 3P into 2P to increase phase spacing)

Overall and mounting dimensions(mm)

YCM8-125PV



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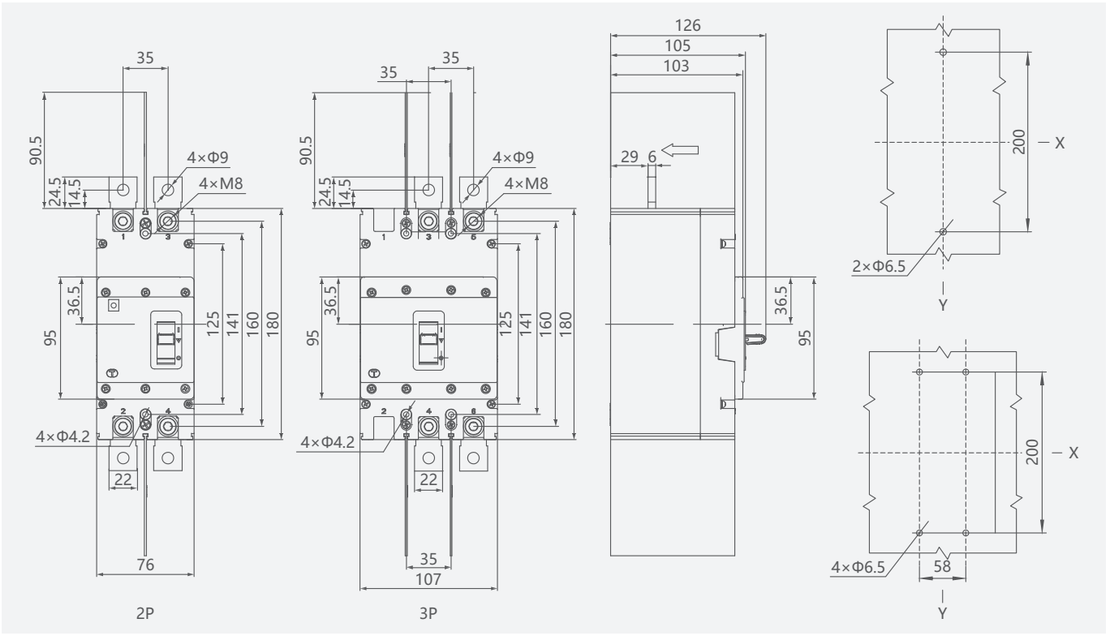
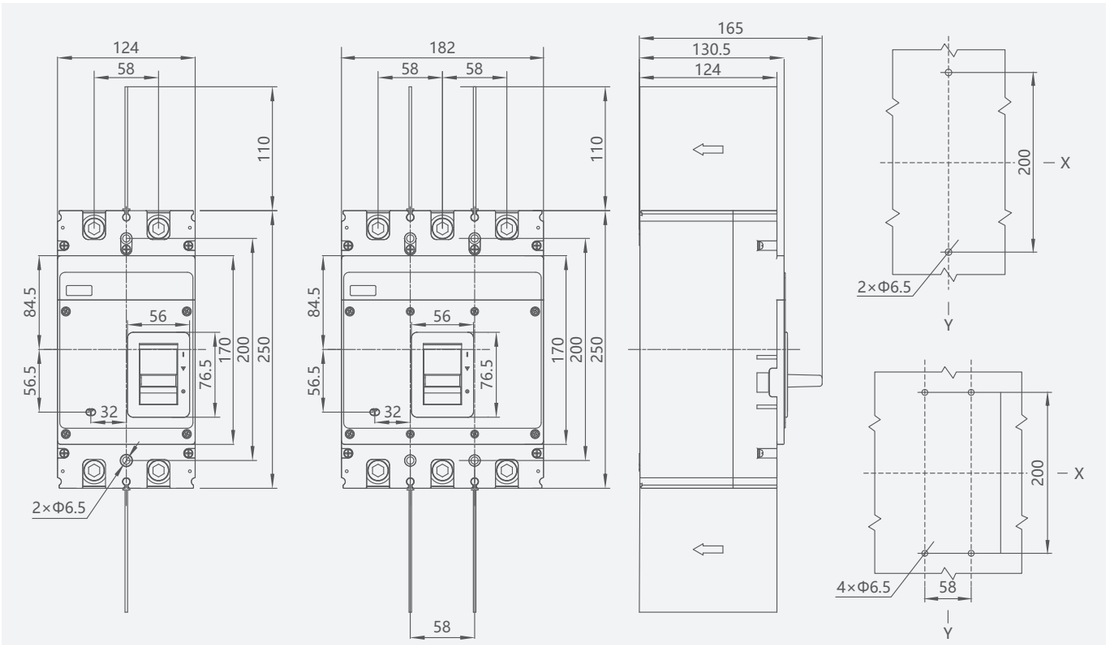
YCM8-250PV、320PV



YCM8-400PV、630PV、800PV



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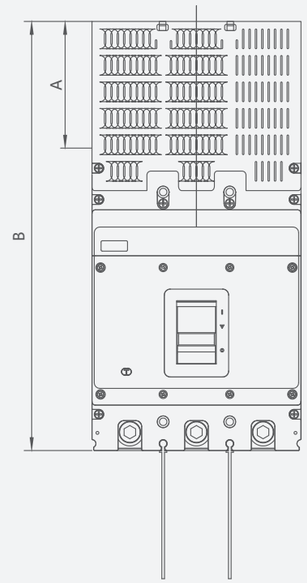
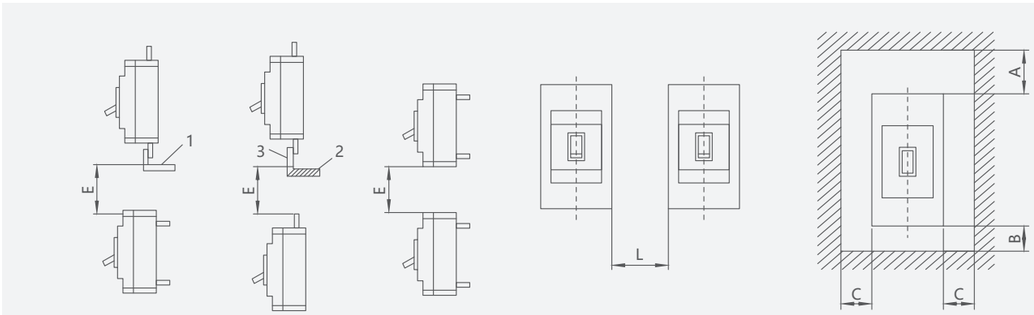
Installation drawing of YCM8-PV with arcing cover



Circuit breaker	Arcing cover length A	Total length B
YCM8-250/320PV	64	245
YCM8-400/630/800PV	64	314

Safety distance when installing circuit breaker



Model	L	A		B	C	E	
		Without zero arcing cover	With zero arcing cover			Without zero arcing cover	With zero arcing cover
YCM8-250PV	40	50	65	25	25	50	130
YCM8-320PV	40	50	65	25	25	50	130
YCM8-400PV	70	100	65	25	25	100	130
YCM8-630PV	70	100	65	25	25	100	130
YCM8-800PV	70	100	65	25	25	100	130

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Temperature correction factor table

Product shell frame	Working current In						
	40℃	45℃	50℃	55℃	60℃	65℃	70℃
250	1.00	1.00	1.00	0.97	0.95	0.93	0.90
320	1.00	0.96	0.94	0.92	0.90	0.88	0.85
400	1.00	1.00	1.00	0.97	0.95	0.93	0.90
630	1.00	1.00	0.98	0.95	0.92	0.89	0.87
800	1.00	0.94	0.92	0.90	0.87	0.84	0.80

Note: 1. When the ambient temperature is lower than 50 ℃, the product can be used normally without derating;
2. The above derating factors are measured at the rated current of the shell frame.

Use of derating table at high altitude

Product shell frame	250			320			400			630			800		
	Rated work Current A	Rated working voltage V	Rated power frequency withstand voltage V	Rated work Current A	Rated working voltage V	Rated power frequency withstand voltage V	Rated work Current A	Rated working voltage V	Rated power frequency withstand voltage V	Rated work Current A	Rated working voltage V	Rated power frequency withstand voltage V	Rated work Current A	Rated working voltage V	Rated power frequency withstand voltage V
2	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2.5	1.00	1.00	1.00	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.94	1.00	1.00
3	1.00	0.98	0.98	0.92	0.98	0.98	1.00	0.98	0.98	0.98	0.98	0.98	0.92	0.98	0.98
3.5	1.00	0.95	0.95	0.90	0.95	0.95	1.00	0.95	0.95	0.95	0.95	0.95	0.90	0.95	0.95
4	1.00	0.92	0.92	0.87	0.92	0.92	1.00	0.92	0.92	0.92	0.92	0.92	0.87	0.92	0.92
4.5	0.98	0.89	0.89	0.84	0.89	0.89	0.98	0.89	0.89	0.89	0.89	0.89	0.84	0.89	0.89
5	0.96	0.86	0.86	0.82	0.86	0.86	0.97	0.86	0.86	0.86	0.86	0.86	0.80	0.86	0.86

Curve