

BB2-63

PV DC Circuit Breaker

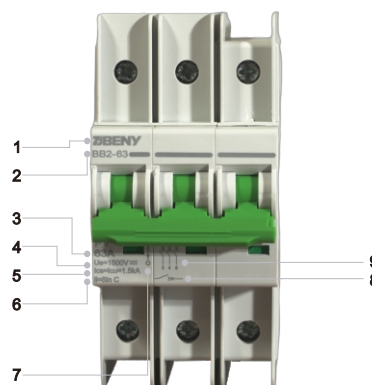


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- 3 Rated Current
- 4 Rated voltage
- 5 Short-circuit breaking capacity
- 6 Tripping characteristic
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- 9 Product wiring diagram

Application

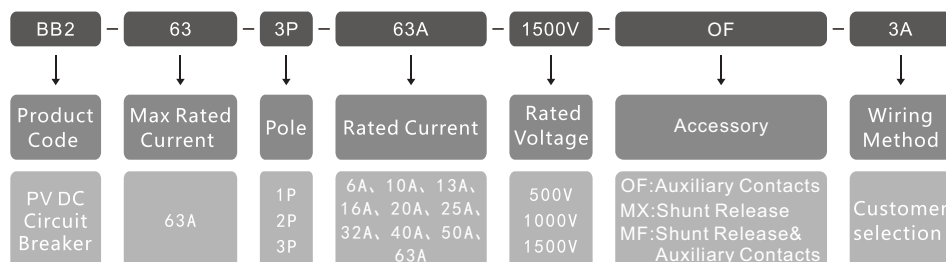
BENY BB2-63 series PV DC circuit breakers are mainly used in electrical equipment such as combiner boxes and energy storage distribution systems. Rated working voltage up to 1500V DC, rated working current up to 63A, Scientific arc extinguishing and current limiting system can quickly disconnect the fault current of the DC distribution system, and can realize countercurrent protection to ensure the reliable operation of the system.

Appearance introduction



Type explanation

- Non-polar
more convenient installation
- High score breaking ability
- Overload protection
short circuit protection
Off-frequency operation
- Rated current up to 63A
- Products comply with
IEC 60947-2、GB/T 14048.2 standard

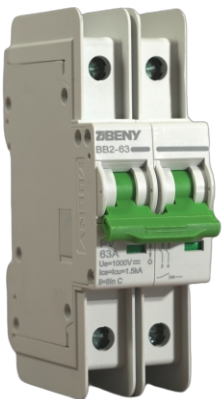
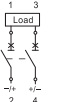
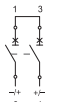
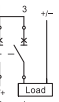
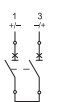
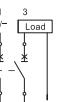
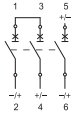
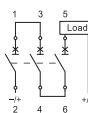
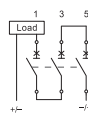
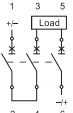


Parameter

Electric Parameter			
Standard		IEC 60947-2、GB/T 14048.2	
Pole		1P	2P3P
Rated Working Voltage	Ue	500V	1000V1500V
Maximum current of shell frame	Ith	63A	
Rated Working Current	In	6A,10A,13A,16A,20A,25A,32A,40A,50A,63A	
Rated Insulation Voltage	Ui	1500V DC	
Rated Impulse Voltage	Uimp	8kV	
Run Breaking Capacity	Icu	1.5kA	
Ultimate Breaking Capacity	Ics	1.5kA	
Flashover distance		< 50mm	
Trip Type		Thermomagnetic type	
Service life			
Mechanical life		10000	
Electrical life		300	
Installation Environment			
Protection Degree		Side IP40, cable port IP20	
Wiring Capacity		1mm ² ~16mm ²	
Wiring Torque		2.0N·m~3.5N·m	
Working Temperature		-40℃~+80℃	
Storage Temperature		-40℃~+85℃	
Resistance to moisture and heat		II (Humidity 55℃, relative humidity 95%)	
Fixed installation		Fixed to the 35mm guide rail	

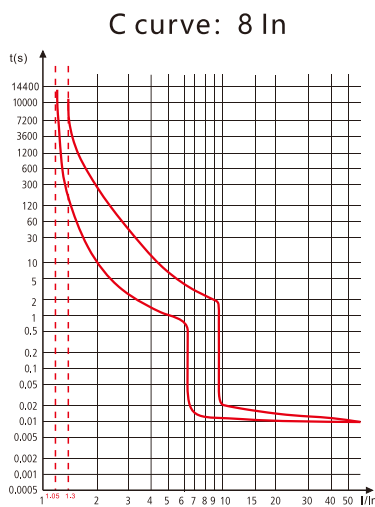


Wiring Diagram

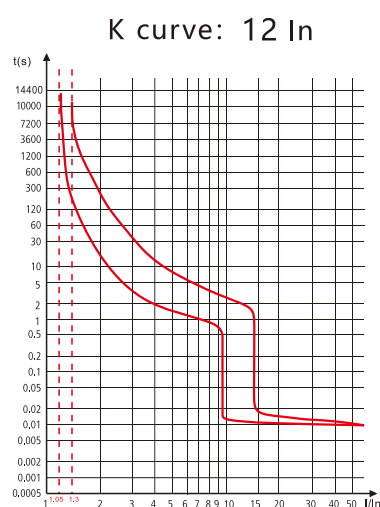
Product Type	Poles	Wiring Diagram		
	1P	1A		
	2P	2A Default wiring mode		
		2B		
		2C		
		3P	3A Default wiring mode	
			3B	
			3C	
			3D	
			3E	User-defined wiring method

Characteristic Curve

Note: Default C curve, if you need other curves, please contact customization



- 1) $I=1.05I_n$, $t < 1h$, Non Tripping ;
- 2) $I=1.3I_n$, $t < 1h$, Tripping;
- 3) $I=2.55I_n$, $t \geq 1-120s$;
- 4) Instantaneous trip: $8 I_n \pm 20\%$



- 1) $I=1.05I_n$, $t < 1h$, Non Tripping ;
- 2) $I=1.3I_n$, $t < 1h$, Tripping;
- 3) $I=2.55I_n$, $t \geq 1-120s$;
- 4) Instantaneous trip: $12 I_n \pm 20\%$

Derating curve

Temperature Derating					
temperature Derating ratio Type	-40°C~40°C	50°C	60°C	70°C	80°C
BB2-63	100%	95%	90%	85%	80%

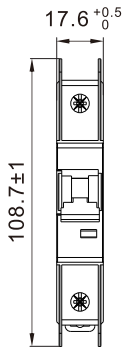
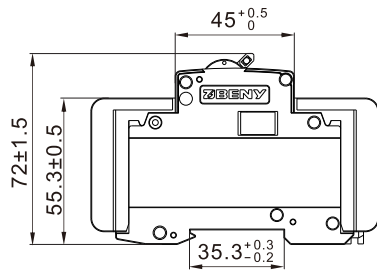
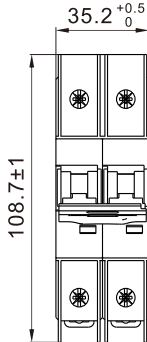
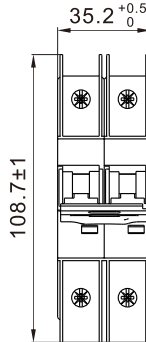
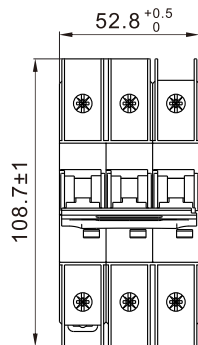
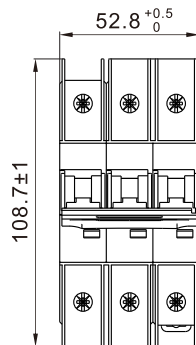
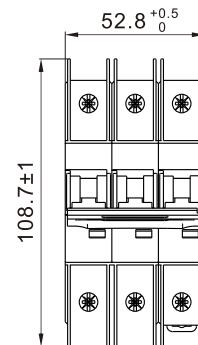
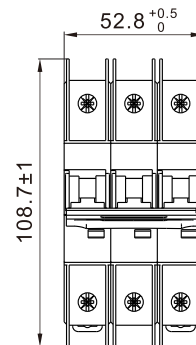
Altitude Derating				
Altitude	2000m	3000m	4000m	5000m
power frequency withstand voltage	100%	100%	100%	100%
Ui	100%	100%	100%	100%
In	100%	100%	90%	80%
Ue	N/A			

Installation Derating					
MCB side by side quantity	1	2-3	4-5	6-9	≥ 10
Reduction coefficient	1	0.95	0.9	0.8	0.7

Recommended wiring section										
Current	6A	10A	13A	16A	20A	25A	32A	40A	50A	63A
Copper wire cross section (mm ²)	1	1.5	2.5	2.5	2.5	4	6	10	10	16

- Note:
1. When the wire specification differs from the recommended cross-section, the overload current range can be customized, indicating the wire specification and length;
 2. Product Selection: Select the corresponding product rated current according to the coefficient 1.3 I_n of the system's maximum current.

Outline Drawing(mm)

1P front dimension drawing		1P side dimension drawing						
								
2P front dimension drawing								
2A Wiring		2B Wiring		2C Wiring				
								
3P front dimension drawing								
3A Wiring		3B Wiring		3C Wiring	3D Wiring		3E Wiring	
								
2P-3P side dimension drawing								

BY-OF

Accessory Type: **BY-OF** – **Auxiliary Contacts**

- Auxiliary contacts indicate product body status
- Meeting Standards : IEC 60947-5-1, GB/T 14048.5

Parameter

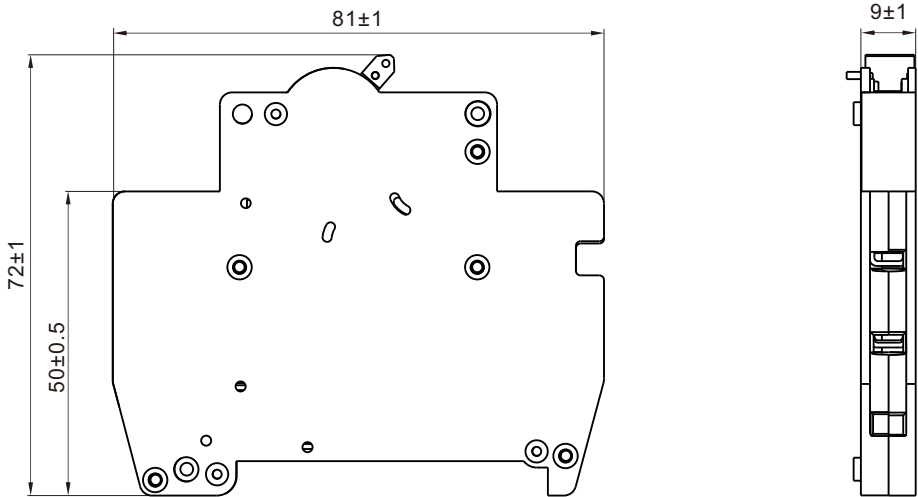


BY-OF Auxiliary switch electrical parameters		
Electric parameter	AC 12	Ie=3A Ue=415V
		Ie=6A Ue=240V
	DC 12	Ie=1A Ue=110V
		Ie=2A Ue=48V
		Ie=6A Ue=24V
Rated insulation voltage	Ui	500V
Rated impulse voltage	Uimp	2.5kV
Min.op.current per contact	I _{min}	100mA
Min.op.voltage per contact	U _{min}	11V DC
Rated Output Frequency		50/60Hz
Electrical life		4000
Mechanical Specifications		
Mechanical life		10000
Protection Class		IP20
Wiring capacity		1mm ² -2.5mm ²
Terminal tightening moment		0.5N·m-0.7N·m
Working tempreture		-40°C~ +80°C

Wiring Diagram

Product indication status	Auxiliary circuit diagram
OFF	
ON	

Dimensions(mm)



BY-MX

Accessory Type: **BY-MX** – **Shunt Release**

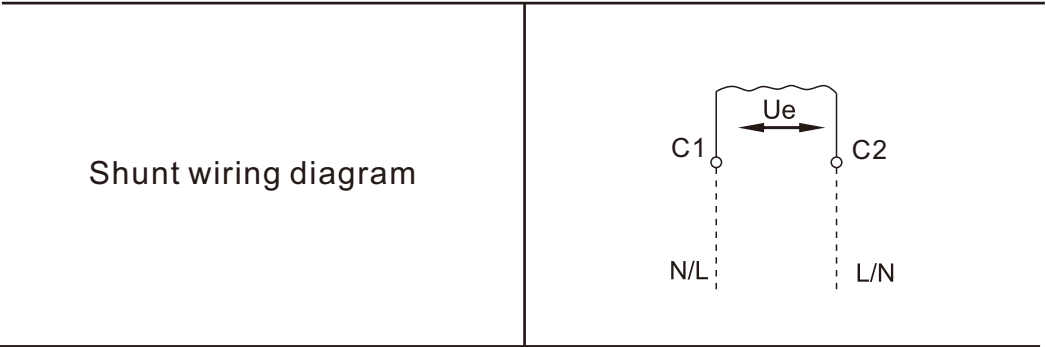
- Shunt release device can remotely release the product body
- Meeting Standards : GB/T 14048.1

Parameter

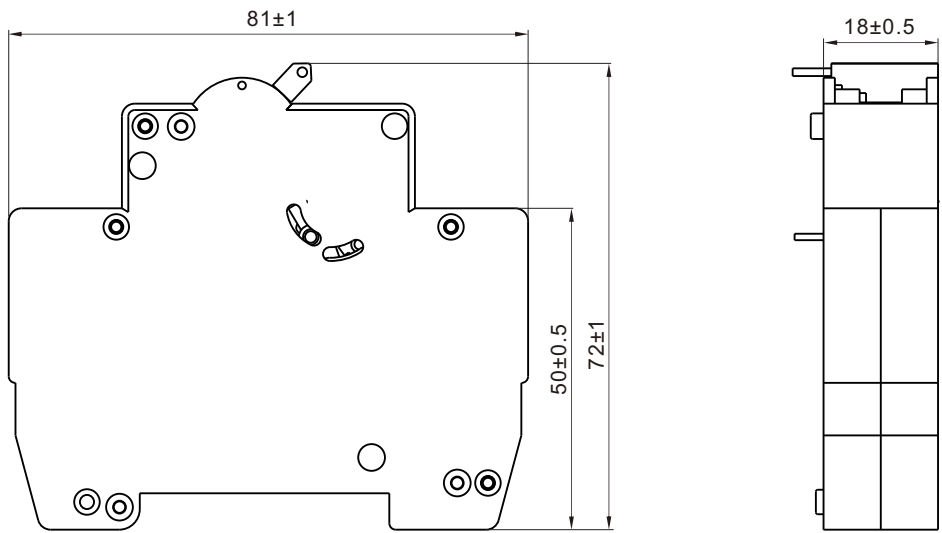


Electrical Parametes	
Rated op. voltage	Ue=DC 12/24V
Conduction time	< 1s
Rated Working Voltage	Ue70%-110%
Rated operating voltage pull-in power	80VA
Tripping Life	1000
Mechanical parameters	
Mechanical Life	10000
Degree of protection	IP20
Terminals capacity	1mm ² ~2.5mm ²
Fastening torque of terminals	0.8N·m~1N·m
Working tempreture	-40~+80°C

Wiring Diagram



Dimensions(mm)



BY-MF

Accessory Type: BY-MF – Shunt aid

- Passive shunt aid integrated□ Auxiliary and shunt wires are separately distributed
- Meeting Standards : IEC 60947-5-1, GB/T 14048.5, GB/T 14048.1

Parameter

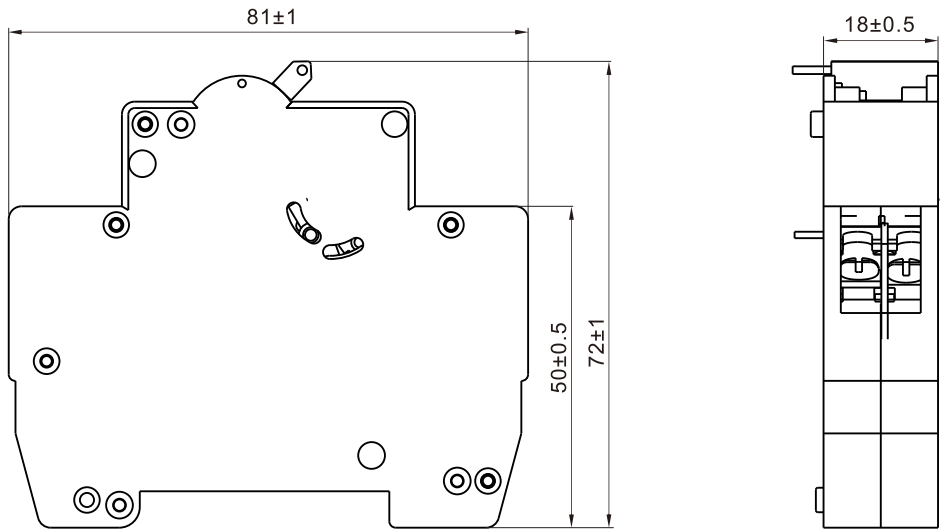


Electrical Parametes			
Auxiliary contact	Rated Working Voltage	AC	Ie=2 Ue=250V Ie=5 Ue=125V
		DC	Ie=5 Ue= 24V
	Rated insulation voltage	Ui	500V
	Rated impulse voltage	Uimp	2.5kV
	Min.op.current per contact	I _{min}	100mA
	Min.op.voltage per contact	U _{min}	11V DC
	Rated frequency		50/60Hz
	Electrical life		4000
Shunt trip	Rated Working Voltage		Ue=DC 12/24V
	Conduction time		< 1s
	Rated Voltage Range		Ue70%-110%
	Rated operating voltage pull-in power		80VA
	Tripping Life		1000
Mechanical parameters			
Mechanical Life			10000
Degree of protection			IP20
Terminals capacity			1mm ² -2.5mm ²
Fastening torque of terminals			0.8N·m-1N·m
Working tempreture			-40~+80℃

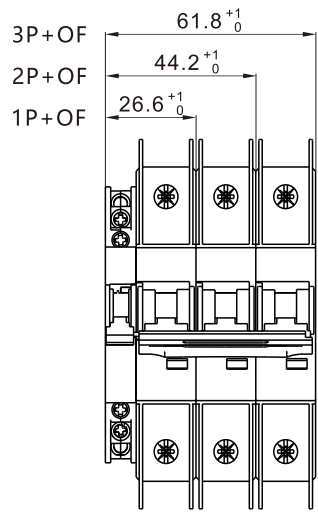
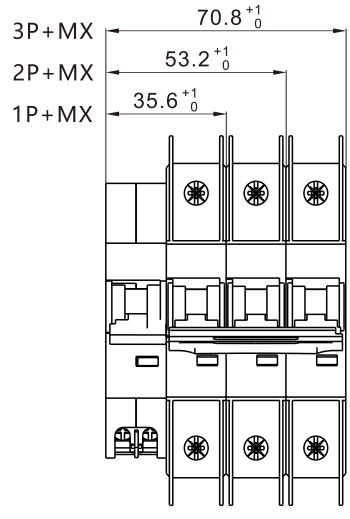
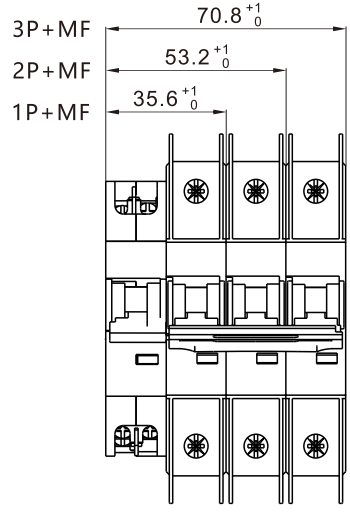
Wiring Diagram

Product indication status	Auxiliary circuit diagram	Shunt circuit diagram
OFF	F11 F12 F14	
ON	F11 F12 F14	

Dimensions(mm)



Product dimensions with accessories(mm)

Product dimensions with accessories	
Type	Dimensions drawing
BY-OF	 3P+OF 61.8⁺¹₀ 2P+OF 44.2⁺¹₀ 1P+OF 26.6⁺¹₀
BY-MX	 3P+MX 70.8⁺¹₀ 2P+MX 53.2⁺¹₀ 1P+MX 35.6⁺¹₀
BY-MF	 3P+MF 70.8⁺¹₀ 2P+MF 53.2⁺¹₀ 1P+MF 35.6⁺¹₀

Precautions for Use

1 Safety Notice

Before installation, operation, running, maintenance, and inspection, please be sure to carefully read this specification and accurately install and use this product according to the content in the specification.

☐ **Danger**

- ☐ When installing, maintaining, and servicing the product, live operation is strictly prohibited;
- ☐ It is strictly prohibited to operate the product with wet hands;
- ☐ During use, touching live parts is strictly prohibited;
- ☐ It is strictly prohibited to test the product by short-circuiting the positive pole to ground or directly short-circuiting the positive and negative poles.

☐ **Attention**

- ☐ The product requires personnel with professional qualifications to perform wiring installation, maintenance, and upkeep;
- ☐ All features of the product have been set during factory production, and should not be disassembled, reassembled, or adjusted at will during use;
- ☐ If the product is damaged, makes abnormal noises, etc. upon unpacking, stop using it immediately and contact the supplier;
- ☐ To prevent phase-to-phase short circuits, insulation treatment should be carried out on bare conductors or copper busbars at the terminals;
- ☐ Circuit breakers cannot protect against personal electric shock and equipment leakage.

2 Environmental Protection

To protect the environment, when this product or its components are discarded, please dispose of them properly as industrial waste; or hand them over to a recycling station for classified disassembly, recycling, and reuse in accordance with relevant national regulations.

3 Warranty Period

When the product is stored and transported under normal conditions and the product packaging or the product itself is in good condition, the warranty period of the product shall be 60 months from the date of production.

The following situations are not covered by the warranty:

- ☐ Damage caused by improper use, storage, or maintenance by the user;
- ☐ Damage caused by non-company-assigned institutions or personnel, or self-disassembly, assembly, or repair;
- ☐ The product has exceeded the warranty period;
- ☐ Damage caused by force majeure factors.