

BB1-80

DC Circuit Breaker



- 1 Brand
- 2 Type
- 3 Rated Current
- 4 Nominal voltage
- 5 Rated voltage
- 6 Breaking capacity
- 7 Indicating window
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- 9 Product wiring diagram

- Non-polar
more convenient installation
- High score breaking ability
- Overload protection
short circuit protection
Off-frequency operation
- Rated current up to 80A
- Products comply with UL489 standard

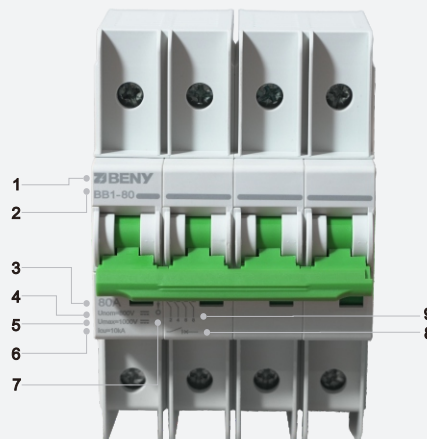


Application



BB1-80 series DC circuit breakers are mainly used in electrical equipment such as bus box and energy storage distribution system. Rated working voltage up to 1000V DC, rated working current up to 80A, 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

BB1	-	80	-	4P	-	80A	-	1000V	-	OF	-	4A
↓		↓		↓		↓		↓		↓		↓
Product Code		Max Rated Current		Pole		Rated Current		Rated Voltage		Accessory		Wiring Method
DC Circuit Breaker		80A		2P 3P 4P		25A,32A, 40A,50A, 63A,80A		500V 750V 1000V		OF: Auxiliary Contacts MX: Shunt Release MF: Shunt Release & Auxiliary Contacts		Customer selection

Parameter

Electric Parameter

Standard		UL 489 SC		
Pole		2P	3P	4P
Rated Working Voltage	Ue	500V	750V	1000V
Maximum current of shell frame	Ith	80A		
Rated Working Current	In	25A,32A,40A,50A,63A,80A		
Rated Insulation Voltage	Ui	1000V DC		
Rated Impulse Voltage	Uimp	6kV		
Breaking Capacity	Icu	10kA		
Flashover distance		< 50mm		
Trip Type		Thermomagnetic type		

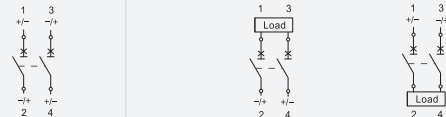
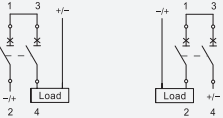
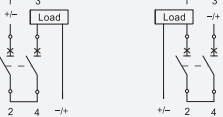
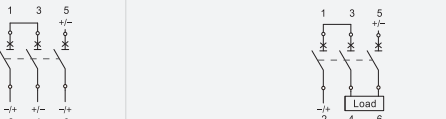
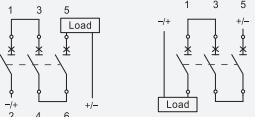
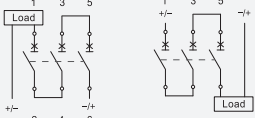
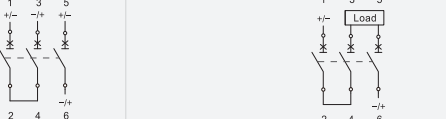
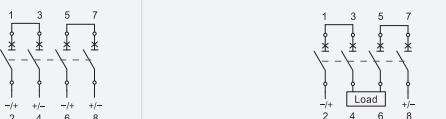
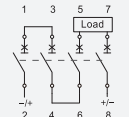
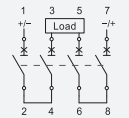
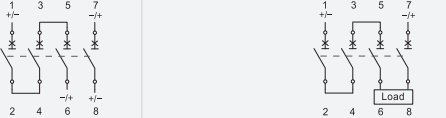
Service life

Mechanical life	10000
Electrical life	1000

Installation Environment

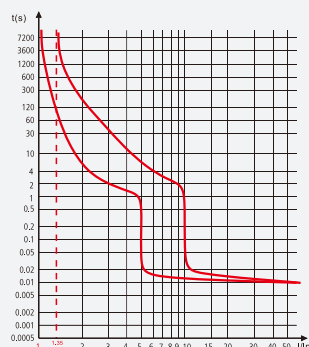
Protection Degree	Side IP40, cable port IP20
Wiring Capacity	AWG10-AWG4
Wiring Torque	3.5N·m Max
Working Temperature	-40°C ~ +80°C
Storage Temperature	-40°C ~ +85°C
Resistance to moisture and heat	II (Humidity 55°C, relative humidity 95%)
Fixed installation	Fixed to the 35mm guide rail

Wiring Diagram

Product Type	Poles	Wiring Diagram	
	2P	2A Default wiring mode	
		2B	
		2C	
	3P	3A Default wiring mode	
		3B	
		3C	
		3D	
		3E	User-defined wiring method
	4P	4A Default wiring mode	
		4B	
		4C	
		4D	
		4E	User-defined wiring method

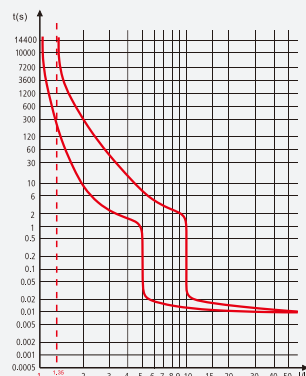
Characteristic Curve

1、 $I \leq 50A$



- 1) $I=1I_n$, Non Tripping ;
- 2) $I=1.35I_n$, $t < 1h$, Tripping;
- 3) $I=2I_n$, $t < 4min(I_n=32-50A)$;
 $I=2I_n$, $t < 2min(I_n=25A)$;
- 4) Instantaneous trip:(5-10) I_n .

2、 $I > 50A$



- 1) $I=1I_n$, Non Tripping;
- 2) $I=1.35I_n$, $t < 2h$, Tripping;
- 3) $I=2I_n$, $t < 6min(I_n=63-80A)$;
- 4) Instantaneous trip:(5-10) I_n .

Derating curve

Temperature Derating

temperature Derating ratio Type	-40℃~40℃	50℃	60℃	70℃	80℃
BB1-80	100%	95%	90%	85%	80%

Altitude Derating

Altitude	2000m	3000m	4000m	5000m
power frequency withstand voltage	100%	100%	100%	100%
U_i	100%	100%	100%	100%
I_n	100%	100%	90%	80%
U_e	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	25A	32A	40A	50A	63A	80A
Copper wire cross section (AWG)	10	8	8	8	4	4

Outline Drawing(mm)

Note: If no bus radiator is installed, the dimensions of the product are as follows

2P front dimension drawing

2A Wiring	2B Wiring	2C Wiring

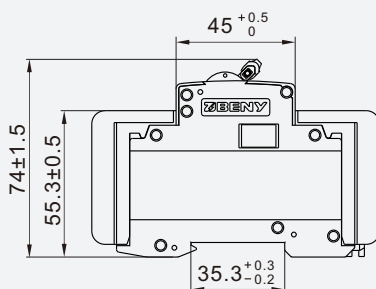
3P front dimension drawing

3A Wiring	3B Wiring	3C Wiring	3D Wiring	3E Wiring

4P front dimension drawing

4A Wiring	4B Wiring	4C Wiring	4D Wiring	4E Wiring

2P-4P side dimension drawing



Outline Drawing(mm)

Note: When a bus radiator is installed, the dimensions are as follows

2P front dimension drawing

2A Wiring	2B Wiring	2C Wiring

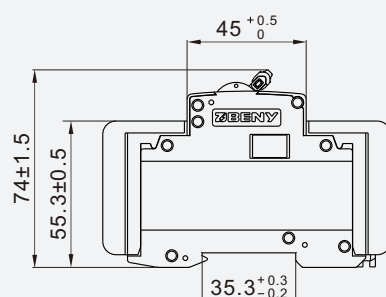
3P front dimension drawing

3A Wiring	3B Wiring	3C Wiring	3D Wiring	3E Wiring

4P front dimension drawing

4A Wiring	4B Wiring	4C Wiring	4D Wiring	4E Wiring

2P-4P side dimension drawing



BY-OF

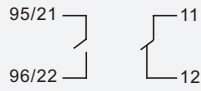
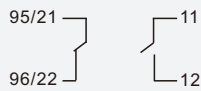
Accessory Type: **BY-OF** – Auxiliary Contacts

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

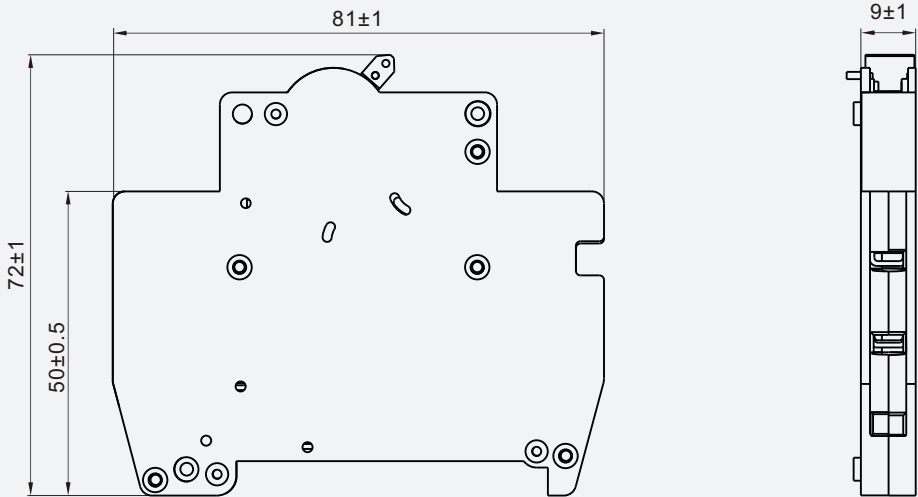
Parameter

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	4kV	
Min.op.current per contact I _{min}	10mA	
Min.op.voltage per contact U _{min}	11V DC	
Rated Output Frequency	50/60Hz	
Mechanical Specifications		
Fixed installation	Fixed to the 35mm guide rail	
Protection Class	IP20	
Wiring capacity	1mm ² -2.5mm ²	
Terminal tightening moment	0.5N·m-0.7N·m	
Working temperture	-40°C~+80°C	

Wiring Diagram

Product indication status	Auxiliary circuit diagram
OFF	
ON	

Dimensions(mm)



BY-MX

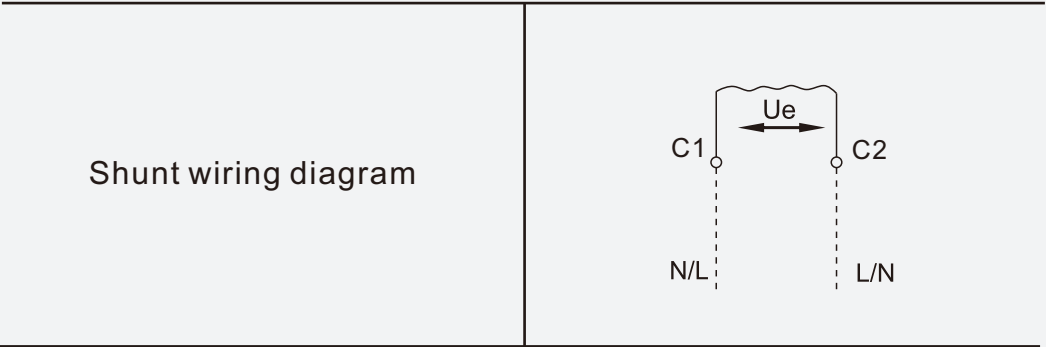
Accessory Type: **BY-MX** – **Shunt Release**

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

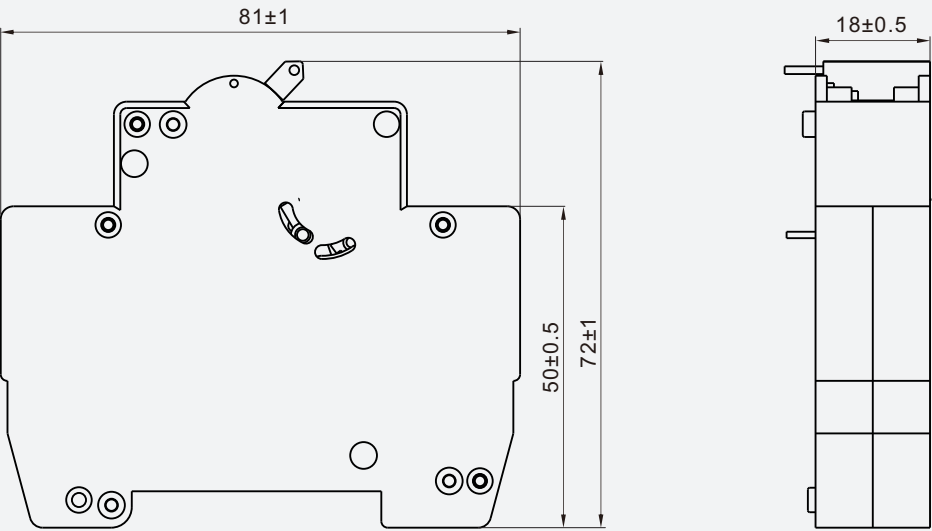
Parameter

BY-MX Electrical parameters of shunt trip device		
Rated operational voltage	AC	Ue=110/415V
		Ue=24/48V
	DC	Ue=12/48V
Conduction time	< 1s	
Min.op.voltage	Ue*70%	
Max.op.voltage	Ue*110%	
Starting current	0.5A-5A	
Operation frequency	6 times per minute	
Rated operating frequency	50/60Hz	
Mechanical Specifications		
Fixed installation	Fixed to the 35mm guide rail	
Protection Class	IP20	
Wiring capacity	1mm²-2.5mm²	
Terminal tightening moment	0.8N·m-1.0N·m	
Working temperture	-40°C~+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

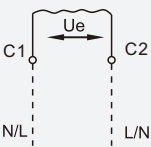
BY-MF Shunt auxiliary electrical parameters

Product Parameter	Shunt Release	AC	Ue=110/415V
			Ue=24/48V
	Auxiliary Contacts	DC	Ue=12/48V
			Ie=2A Ue=250V
		AC	Ie=5A Ue=12-125V
		DC	Ie=5A Ue=12-36V
Rated Output Frequency	50/60Hz		
Shunt power on time	< 1s		
Shunt Min.op. voltage	Ue*70%		
Shunt Max.op. voltage	Ue*110%		
Shunt Starting current	0.5A-5A		
Shunt Operation frequency	6 times per minute		

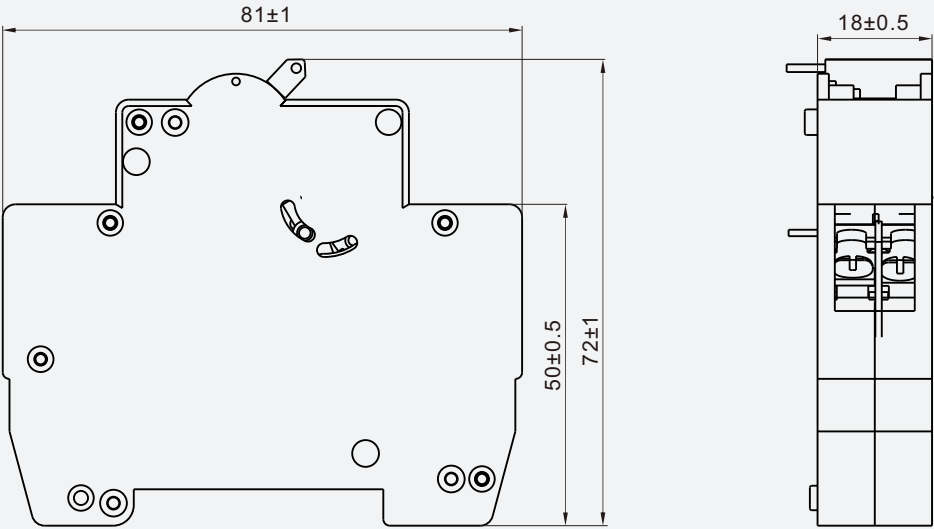
Mechanical Specifications

Fixed installation	Fixed to the 35mm guide rail
Protection Class	IP20
Wiring capacity	1mm²~2.5mm²
Terminal tightening moment	0.8N·m-1.0N·m
Working temprature	-40℃~+80℃

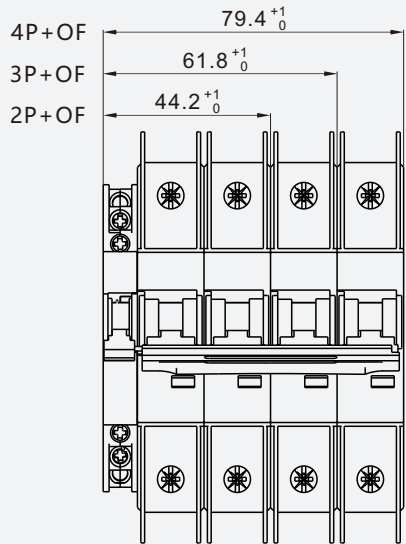
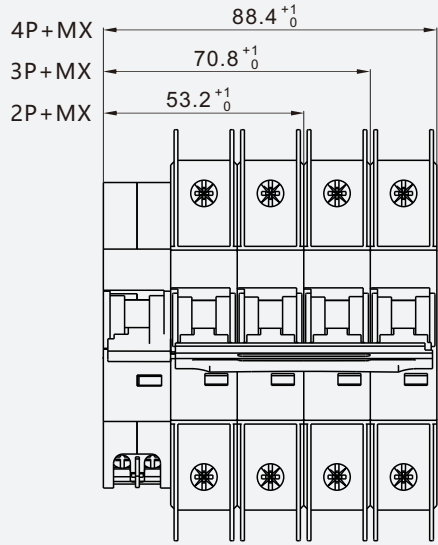
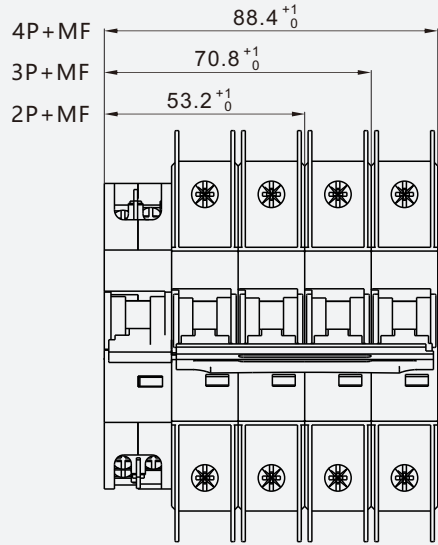
Wiring Diagram

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	 4P+OF 79.4⁺¹₀ 3P+OF 61.8⁺¹₀ 2P+OF 44.2⁺¹₀
BY-MX	 4P+MX 88.4⁺¹₀ 3P+MX 70.8⁺¹₀ 2P+MX 53.2⁺¹₀
BY-MF	 4P+MF 88.4⁺¹₀ 3P+MF 70.8⁺¹₀ 2P+MF 53.2⁺¹₀