

## BB1-63 PV Miniature Circuit Breakers



- 1 Brand
- 2 Type
- 3 Rated Current
- 4 Rated Voltage
- 5 Standard Code
- 6 Indicator
- 7 Wiring Diagram

- Nonpolarity
- High Short-Circuit / Breaking Capacity
- Functions: Overload, Short Circuit, Unfrequent Operation and, Anti-reflux Protection
- Rated Voltage: 1200V, Ultimate
- Breaking Capacity : 5kA
- Rated Current: 50A
- Comply with : UL 489B



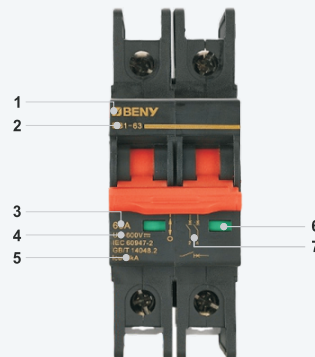
BB1F-63

with IP65 Waterproof Enclosure

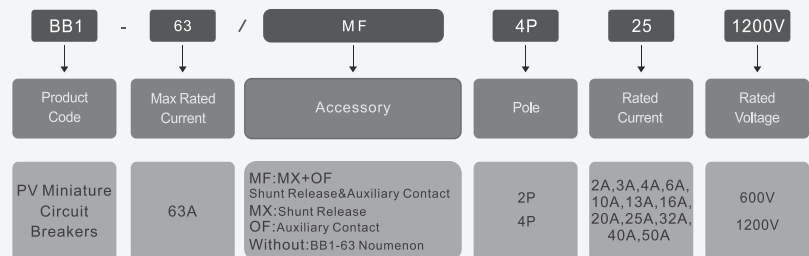
## Application

**ZBENY** BB1-63 PV miniature circuit breakers are designed for solar DC strings protection according to UL489B standard. Offer overload protection, anti-reflux function and short-circuit protection to solar PV systems, UPS and BESS. The new design brings higher safety and durable working life.

## Appearance Introduction





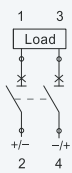
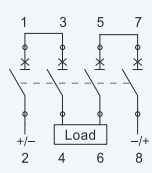
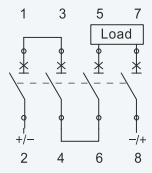
## Type Instruction



## Parameter

Electrical Characteristics		
Type	BB1-63	
Comply with	UL 489B	
Pole	2P	4P
Rated Working Voltage	Ue	600V DC / 1200V DC
Conventional thermal current	I <sub>th</sub>	63A
Rated Current	I <sub>n</sub>	2A,3A, 4A, 6A,10A,13A,16A,20A,25A,32A,40A,50A
Rated Insulated Voltage	U <sub>i</sub>	1200V DC
Rated Impulsed Voltage	U <sub>imp</sub>	6kV
Ultimate Breaking Capacity	I <sub>cs</sub>	5kA
Tripping Type	Thermal Magnetic Type	
Service Life/cycle Operation		
Mechanical	Actual Value	10000
	Standard Value	1000
Electrical	Actual Value	1000
	Standard Value	1000
Installation Environment		
Ingress Protection	All Sides IP40 ,Connection Terminal IP20	
Terminal Cross Section	2.5-25mm <sup>2</sup>	
Working Temperature	-25°C ~ +70°C	
Storage Temperature	-40°C ~ +85°C	
Resistance to Humidity And Heat	II (when temperature arrived to 55°C, Relative Humidity95%)	

**Wiring Meth**

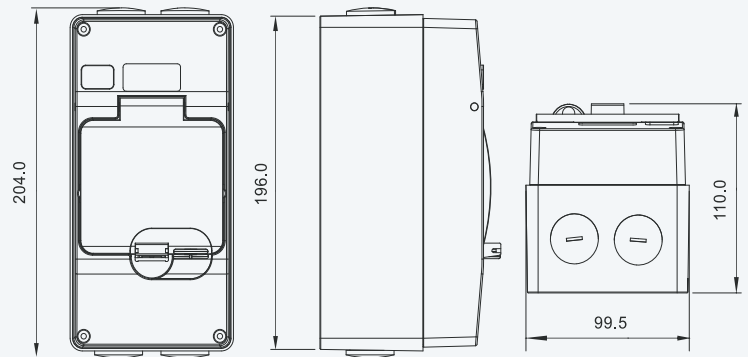
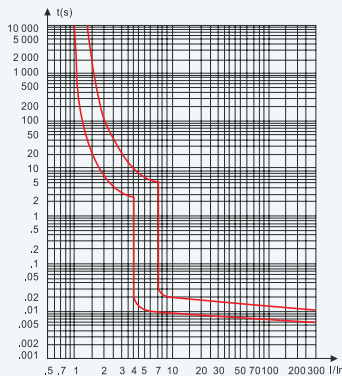
Pole	2P		4P	
Type				
Contacts Wiring graph	2B		4A	4B
				

DC Circuit Breakers

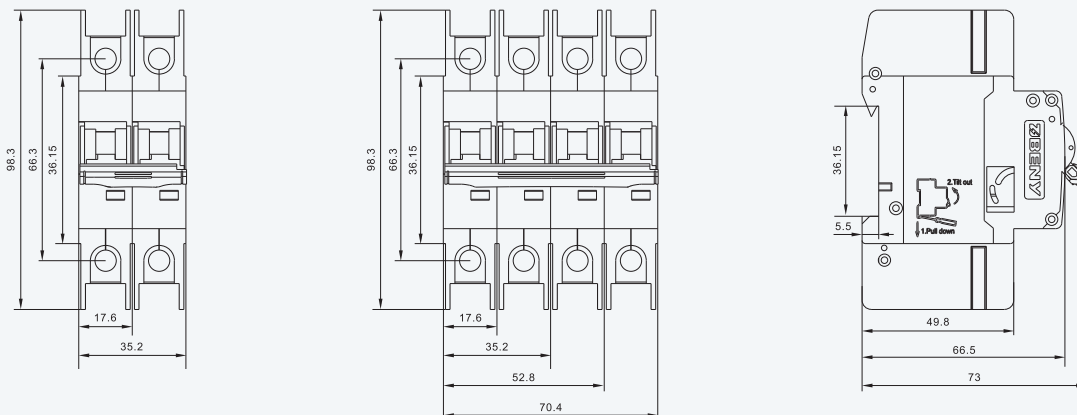
**Characteristic Curve**

**Waterproof Enclosure Dimensions(mm)**

B curve : (4-6) In



**Dimensions(mm)**

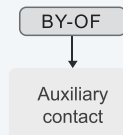


## Auxiliary contact for BB1-63

Auxiliary contact unit must be mounted from the left to the device or to the release unit(s) when installed. Contact units are equipped with changeover (CO) combination(s) of contacts.

- Auxiliary contact synchronous with main contacts of device
- According to IEC/EN 62019

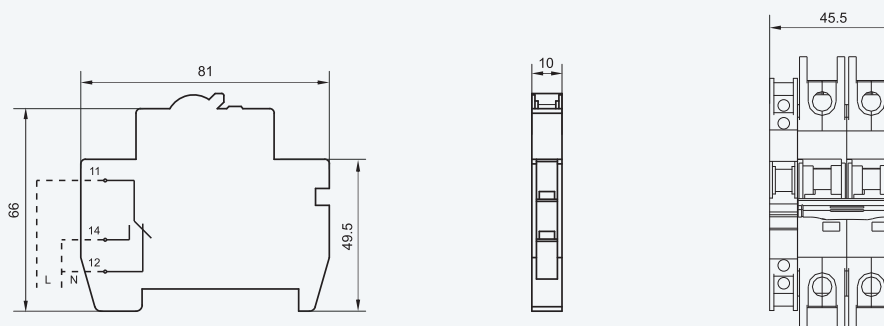
### Type Instruction



Auxiliary contact		
Electrical parameters		
Contacts	BY-OF 2 changeover	
Contact function	auxiliary contact	
Tested according to	IEC/EN 62019	
Rated op. voltage	AC12	I <sub>e</sub> =3A U <sub>e</sub> =380/415V
	DC 12	I <sub>e</sub> =1A U <sub>e</sub> =110/125V
Min. op. current per contact I <sub>min</sub>	10 mA	
Min. op. voltage per contact U <sub>min</sub>	11V DC	
Rated frequency	50/60 Hz	
Mechanical parameters		
Mounting	easy fastening onto 35 mm device rail	
Degree of protection	(DIN)IP20	
Terminals	lift	
Terminal capacity	≤1mm <sup>2</sup>	
Fastening torque of terminals	0.8 — 1 N·m	
Working temperature	- 35 ~ + 70 °C	



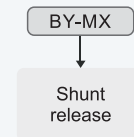
### Dimensions(mm) (With Auxiliary Contact)



## Shunt Release for BB1-63

- Shunt Release for installation devices BB1-63
- Shunt release
- According to IEC/EN 62019

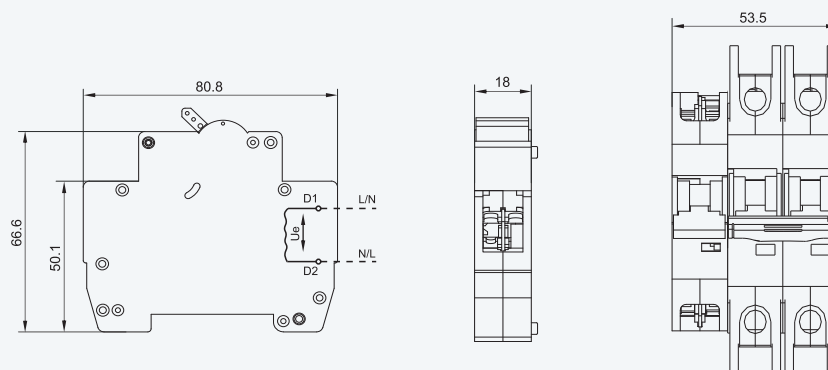
### Type Instruction



Shunt release		
Electrical parameters		
		BY-MX
Contacts		1 changeover (CO)
Contact function		Shunt release
Tested according to		IEC/EN 60947-5-1
Rated op. voltage	AC	le=2A Ue=220/415V
		le=2A Ue=24/48V
	DC	le=2A Ue=24/48V
Min. op. voltage		Ue*75%
Max. op. voltage		Ue*110%
Starting current		1 A
Rated frequency		50/60 Hz
Mechanical parameters		
Mounting		easy fastening onto 35 mm device rail
Degree of protection		(DIN) IP20
Terminals		lift
Terminal capacity		≤1mm <sup>2</sup>
Fastening torque of terminals		0.8 — 1 N·m
Working temperature		- 35 ~ + 70 C



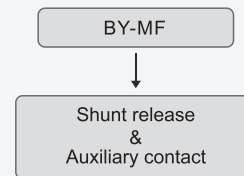
### Dimensions(mm) (With Shunt Release)



## Shunt Release and Auxiliary contact for BB1-63

- Shunt Release and Auxiliary contact for installation devices BB1-63
- Shunt release and Auxiliary contact

### Type Instruction



#### BY-MF

#### Electrical parameters

		BY-MF	
Contacts	2 changeover (CO)		
Contact function	Shunt Release & Auxiliary Contact		
Rated op. voltage	Shunt release	AC	$I_e=2A$ $U_e=220/415V$ $I_e=2A$ $U_e=24/48V$
		DC	$I_e=2A$ $U_e=24/48V$
	Auxiliary contact	AC	$I_e=3A$ $U_e=220/415V$
		50/60 Hz	

#### Mechanical parameters

Mounting	easy fastening onto 35 mm device rail
Degree of protection	(DIN) IP20
Terminals	lift
Terminal capacity	$\leq 1mm^2$
Fastening torque of terminals	0.8 — 1 N·m
Working temperature	- 35 ~ + 70



### Dimensions(mm)(With Shunt Release & Auxiliary Contact)

