



Leading Manufacturer Provides  
Solar Power Safety

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If the models and specification in this product catalogue is changed due to the change of products, we will not inform.





## Leading Supplier for Solar Photovoltaic Components

## COMPANY PROFILES



**ZBENY** is top 1 DC switch brand in solar PV industry.

The first DC switch listed by UL508i in China.

The first DC isolator in full range complies with AS60947.3:2018DC-PV2.

Recommend to solar PV installers by top inverter companies worldwide and Clean Energy Council Australia.

we are developing true DC components at 1000V 1500v, supplying DC string level safety to solar PV industry.

**Mission:**

Making Solar PV Power System More Reliable and Safe

**Value:**

Honesty, Responsibility, Innovation

**Faith:**

People-oriented, creating value; Scientific management, keeping developing

**Quality policy:**

Create the Best Products and Superb

**Servicetocial Responsibility:**

Devote us to improve the quality of life of the workforce and their families as well as the local community and society at large and to behave ethically in business and contribute to economic development.



## Making Superb Product , Creating Top Brand

# MANUFACTURING

The **ZBENY** Quality Management System, which includes this Policy, provides the framework through which a formal and continuing program of review is adopted and fully supported so that products, services and the effectiveness of systems, policies, objectives and targets may be continually measured and improved as far as possible.

**ZBENY** defines Quality as conformance to our Customers' needs, both internally and externally, and as conformance to all defined quality system requirements. Consequently, we recognise the value of our customers and the impact of our activities upon them.





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# CERTIFICATE





# BYH/BYT

## Series DC Isolator Switches

Welcome to your website for more information:

[www.beny.com](http://www.beny.com)



### BYH Series Non-polarity DC Isolator Switches 4P 1000V 32A



- 1 Waterproof Plug
- 2 IP66 Ingress Protection
- 3 Sealed Plug
- 4 OFF
- 5 LOCK
- 6 Standard
- 7 Brand
- 8 Type
- 9 ON
- 10 Knob



Accessories

### Application

**BENY** BYH-32 true DC isolator switch in IP66 enclosure is developed for solar residential and commercial PV rooftop systems, should be installed between solar panels and inverter for DC power isolation. The first DC isolator complies with DC-PV2 AS60947.3 2018 standard. The patent arc-extinguish chamber and qualify material ensure the DC isolator's reliable and long working life. Breather valve is attached on the enclosure bottom. Max voltage up to 1000V.

### Feature

- IP66, UV Resistance
- Arcing Time < 3ms
- Earth Terminal
- IEC60947-3, AS60947.3
- 2 Poles, 4 Poles Available(Single | Double String)
- DC-PV2 / DC-21B: 32A up to 1000VDC

### Appearance Introduction



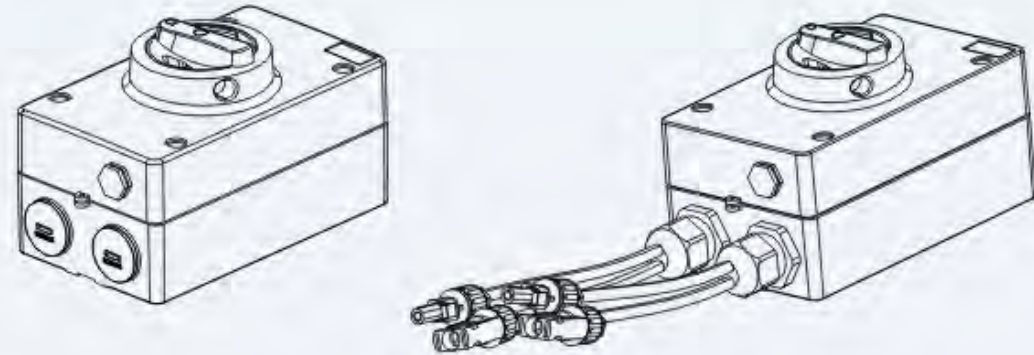
### Parameter

| Electrical Characteristics                           |  |      |
|--|--|------|
| Type   | BYH-32, BYH-32M1, BYH-32M2                                 |      |
| Function   | Isolator, Control  |      |
| Standard   | IEC60947-3, AS60947.3                                      |      |
| Utilization category                                 | DC-PV2 / DC-21B  |      |
| Pole   | 4P   |      |
| Rated frequency                                      | DC   |      |
| Rated operational voltage ( $U_o$ )                  | 300V, 500V, 600V, 800V, 1000V                              |      |
| Rated operational current ( $I_o$ )                  | See the next page  |      |
| Rated insulation voltage ( $U_i$ )                   | 1200V  |      |
| Conventional free air thermal current ( $I_{ca}$ )   | II   |      |
| Conventional enclosed thermal current ( $I_{ca}$ )   | Same as $I_o$  |      |
| Rated short-time withstand current ( $I_{sc}$ )      | 1kA, 1s (4,4B); 1.7kA, 1s (2H)                             |      |
| Rated short-time making capacity ( $I_{sm}$ )        | 1.7kA(4,4B); 3kA(2H)                                       |      |
| Rated conditional short-circuit current ( $I_{sc}$ ) | 3kA  |      |
| Rated impulsive withstand voltage ( $U_{imp}$ )      | 8.0kV  |      |
| Overvoltage category                                 | II   |      |
| Suitability for isolation                            | Yes  |      |
| Polarity   | No polarity, "+" and "-" polarities could be interchanged. |      |
| Service Life/Cycle Operation                         |  |      |
| Mechanical   | 15000  |      |
| Electrical   | 1000   |      |
| Installation Environment                             |  |      |
| Ingress Protection                                   | Enclosure  | IP66 |
|  | Switch body  | IP20 |
| Storage Temperature                                  | -50°C ~ +90°C  |      |
| Operation Temperature                                | -40°C ~ +85°C  |      |
| Mounting Type  | Vertically or horizontally                                 |      |
| Pollution degree                                     | 3  |      |
| Suitable environment                                 | Outdoor / Indoor   |      |



## BYH Series Non-polarity DC Isolator Switches

### Breathing Valve



Remarks:  
ZJBENY DC Isolator has a breathing valve already, to avoid the condensation issue.

| Identification   | Rating data                                    |   |   |     |
|--|--|---|---|-----|
| Switch, unenclosed - catalogue number (with DC-PV2 rating)   | BYH.2-32                                       |   |   |     |
| Specific dedicated individual enclosure - catalogue number (with minimum IP56NW rating)  | BYH-32 IP66NW                                  |   |   |     |
| Assembly of switch and specific dedicated individual enclosure - catalogue number  | /  |   |   |     |
| $I_n$ rated thermal current, unenclosed, at 40°C shade ambient air temperature   | 32 amps  |   |   |     |
| $I_{in}$ rated thermal current, indoors, at 40°C shade ambient air temperature, in a specific dedicated enclosure  | 32 amps  |   |   |     |
| $I_{iso}$ rated thermal current outdoors at 40°C shade ambient air temperature without solar effects in a specific dedicated enclosure rated IP66NW                      | 32 amps  |   |   |     |
| $I_{iso}$ solar current value outdoors at 60°C shade ambient air temperature (see D.8.3.11, table D3), with solar effects in a specific dedicated enclosure rated IP66NW | 29 amps  |   |   |     |
|  | $U_e$<br>rated operational voltage<br>DC Volts | $I_n$ : DC-PV2<br>rated operational current<br>Amps | $I_{nom}$ and $I_{allow}$ :<br>DC-PV2 4 x $I_n$<br>Amps |     |
| 4-pole<br>2 pole in series<br>4  | (1/2/—)  | 300   | 32  | 128 |
|  |  | 500   | 32  | 128 |
|  |  | 600   | 13  | 52  |
|  |  | 800   | 9   | 36  |
|  |  | 1000  | 9   | 36  |
| 2-pole<br>4 pole in series<br>4B   | (1/2/3/4/—)                                    | 300   | 32  | 128 |
|  |  | 500   | 32  | 128 |
|  |  | 600   | 32  | 128 |
|  |  | 800   | 32  | 128 |
|  |  | 1000  | 32  | 128 |

### Wiring Diagram for Rated operational voltage $U_e(V)$ & Rated operational current $I_e(A)$

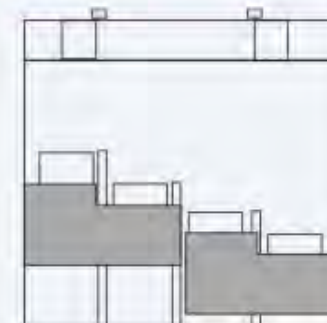
| Contacts wiring diagram | 300V | 500V | 600V | 800V | 1000V | Poles in series | Number of Strings | Type Number |
|-------------------------|------|------|------|------|-------|-----------------|-------------------|-------------|
|                         | 32A  | 32A  | 13A  | 9A   | 9A    | 2               | 2                 | 4           |
|                         | 40A  | 40A  | /    | /    | /     | 4               | 1                 | 2H          |
|                         | 32A  | 32A  | 32A  | 32A  | 32A   | 4               | 1                 | 4B          |
|                         | 32A  | 32A  | 32A  | 32A  | 32A   | 4               | 1                 | 4S          |

### Switching Configurations

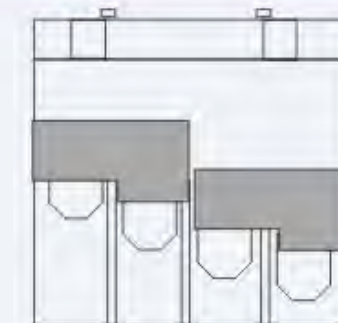
| Type                     | 4-pole | 2-pole<br>4 Paralleled<br>Poles | 4-pole with Input<br>and<br>Output bottom | 4-pole with Input<br>on top<br>Output bottom |
|--------------------------|--------|---------------------------------|---|--|
|                          | 4      | 2H                              | 4B  | 4S   |
| Contacts<br>Wiring graph |        |                                 |   |  |
| Switching<br>example     |        |                                 |   |  |

### Bridgion Links Installation

#### Installed incorrectly



#### Installed correctly



\* Warning: You must ensure all connections (including bridging link connections) are suitable for the rated current, prepared to ensure only conductive parts are clamped and tightened to the manufacturers required torque before energization.

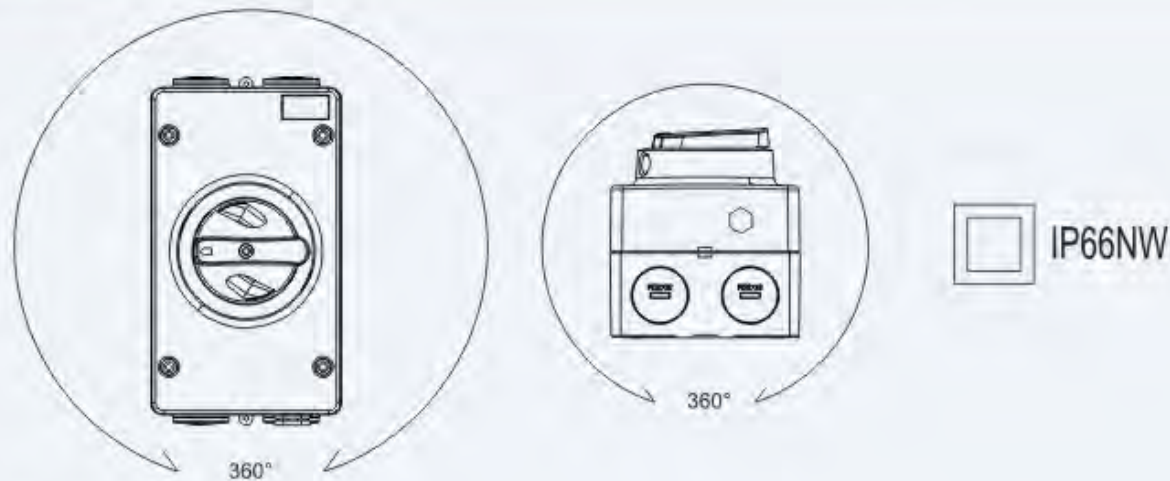


## BYH Series Non-polarity DC Isolator Switches

### Terminals / connection

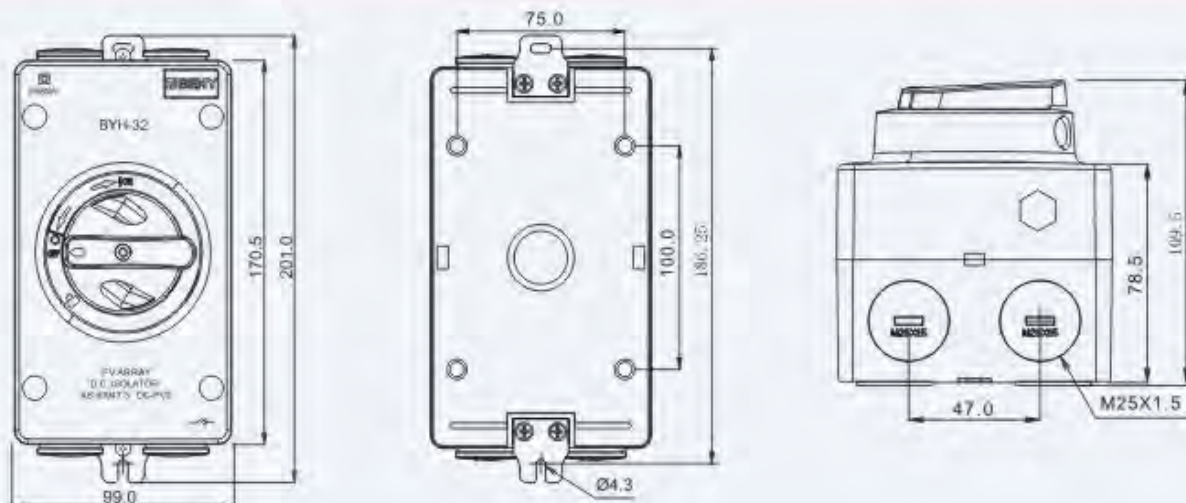
| Type                                   | BYH-32, BYH-32M1, BYH-32M2   |
|--|--|
| Number of poles                        | 4-pole   |
| Terminal designation, main circuit     | 1; 3; 5; 2; 4; 6; 7; 8   |
| Type of terminal, main circuit         | Screw terminal   |
| Rated cross section area, main circuit | 4.0-16mm <sup>2</sup>  |
| Type of Conductor                      | 4-16mm <sup>2</sup> (Rigid: Solid or Stranded)<br>4-10mm <sup>2</sup> (Flexible) |
| Number of conductors per terminal      | 1  |
| Required preparation of the conductor  | Yes  |
| Stripping length (mm), main circuit    | 8mm  |
| Tightening torque (M4), main circuit   | Min: 1.2Nm<br>Max: 1.8Nm   |

### IP Rating



Remarks:  
ZBENY DC Isolator can be installed in any direction, but must do well performance for waterproof.

### Dimensions(mm)

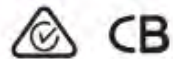


### Data according to AS60947-3:2018

| Main Contacts                            | Type  | BYH-32 | Appendix B5 |     |
|--|-------|--------|-------------|-----|
| Rated thermal current $I_{thc}$          | A     | 32     | Making &    |     |
| Rated insulation voltage $U_i$           | V     | 1000   | Breaking    |     |
| Distance of contacts (per pole)          | mm    | 8      | 5x          |     |
| Rated operational current $I_e$ (DC-PV2) |       |        | operations  |     |
| 1 pole<br>1                              | 300V  | A      | 25          | 100 |
|  | 400V  | A      | 10          | 40  |
|  | 500V  | A      | 8           | 32  |
|  | 600V  | A      | 8           | 32  |
|  | 800V  | A      | 3           | 12  |
|  | 1000V | A      | 2           | 8   |
| 4-pole<br>2 pole in series<br>4          | 500V  | A      | 32          | 128 |
|  | 600V  | A      | 13          | 52  |
|  | 700V  | A      | 9           | 36  |
|  | 800V  | A      | 9           | 36  |
|  | 900V  | A      | 9           | 36  |
|  | 1000V | A      | 9           | 36  |
| 2-pole<br>4 parallel poles<br>2H         | 500V  | A      | 40          | 160 |
|  | 600V  | A      | /           | /   |
|  | 700V  | A      | /           | /   |
|  | 800V  | A      | /           | /   |
|  | 900V  | A      | /           | /   |
|  | 1000V | A      | /           | /   |
| 2-pole<br>4 pole in series<br>4B         | 500V  | A      | 32          | 128 |
|  | 600V  | A      | 32          | 128 |
|  | 700V  | A      | 32          | 128 |
|  | 800V  | A      | 32          | 128 |
|  | 900V  | A      | 32          | 128 |
|  | 1000V | A      | 32          | 128 |



**BYT Series  
Non-polarity  
DC Isolator Switches  
4P 1200V 32A**



- 1 Waterproof Plug
- 2 IP66 Ingress Protection
- 3 Sealed Plug
- 4 OFF
- 5 LOCK
- 6 Standard
- 7 Brand
- 8 Type
- 9 ON
- 10 Knob

BYT-32      BYT-32 with MC4



Accessories

**Application**

**ZBENY** BYT-32 true DC isolator switch in IP66 enclosure is developed for solar residential and commercial PV rooftop systems, should be installed between solar panels and inverter for DC power isolation. The first DC isolator complies with DC-PV2 AS60947.3 2018 standard. The patent arc-extinguish chamber and qualify material ensure the DC isolator's reliable and long working life. Breather valve is attached on the enclosure bottom. Max voltage up to 1200V.

**Feature**

- IP66, UV Resistance
- Arcing Time < 3ms
- Earth Terminal
- IEC60947-3, AS60947.3
- 2 Poles, 4 Poles Available(Single | Double String)
- DC-PV2 / DC-21B: 32A up to 1200VDC

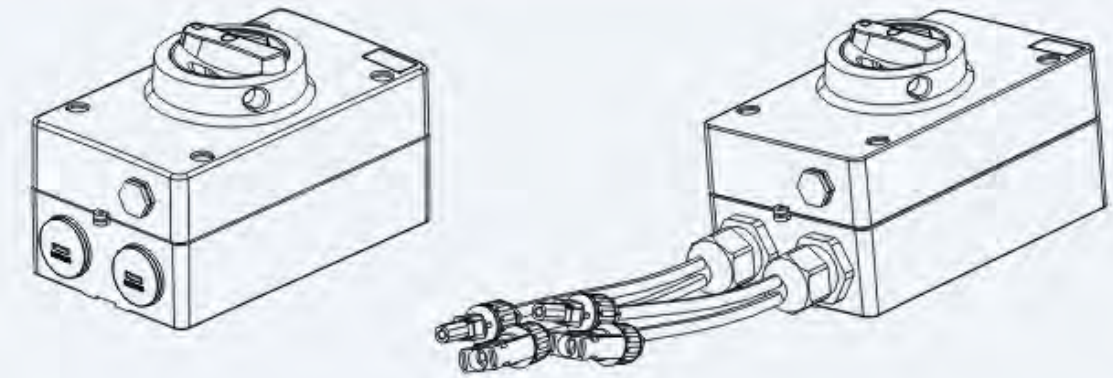
**Appearance Introduction**



**Parameter**

| Electrical Characteristics                           |  |
|--|--|
| Type   | BYT-32, BYT-32M1, BYT-32M2, BYT.1-32, BYT.2-32             |
| Function   | Isolator, Control  |
| Standard   | IEC60947-3, AS60947.3                                      |
| Utilization category                                 | DC-PV2 / DC-21B  |
| Pole   | 4P   |
| Rated frequency                                      | DC   |
| Rated operational voltage ( $U_c$ )                  | 600V, 800V, 1000V, 1200V                                   |
| Rated operational current ( $I_c$ )                  | See the next page  |
| Rated insulation voltage ( $U$ )                     | 1200V  |
| Conventional free air thermal current ( $I_{th}$ )   | II   |
| Conventional enclosed thermal current ( $I_{th}$ )   | Same as $I_{th}$   |
| Rated short-time withstand current ( $I_{sc}$ )      | 1kA, 1s (4, 4B); 1.7kA, 1s (2H)                            |
| Rated short-time making capacity ( $I_{sm}$ )        | 1.7kA, (4, 4B); 3kA, (2H)                                  |
| Rated conditional short-circuit current ( $I_{sc}$ ) | 3kA  |
| Rated impulsive withstand voltage ( $U_{imp}$ )      | 8.0kV  |
| Overvoltage category                                 | II   |
| Suitability for isolation                            | Yes  |
| Polarity   | No polarity, "+" and "-" polarities could be interchanged. |
| Service Life/Cycle Operation                         |  |
| Mechanical   | 15000  |
| Electrical   | 1000   |
| Installation Environment                             |  |
| Ingress Protection                                   | Enclosure: IP66<br>Switch body: IP20                       |
| Storage Temperature                                  | -50°C ~ +90°C  |
| Operation Temperature                                | -40°C ~ +85°C  |
| Mounting Type  | Vertically or horizontally                                 |
| Pollution degree                                     | 3  |
| Suitable environment                                 | Outdoor / Indoor   |

**Breathing Valve**



Remarks:  
ZBENY DC Isolator has a breathing valve already, to avoid the condensation issue.

| Identification  | Rating data                              |   |  |     |
|---|--|---|--|-----|
| Switch, unenclosed - catalogue number (with DC-PV2 rating)  | BYT.1-32, BYT.2-32                       |   |  |     |
| Specific dedicated individual enclosure - catalogue number (with minimum IP66NW rating)   | BYT-32 IP66NW                            |   |  |     |
| Assembly of switch and specific dedicated individual enclosure - catalogue number   | /  |   |  |     |
| $I_{th}$ rated thermal current, unenclosed, at 40°C shade ambient air temperature   | 32 amps                                  |   |  |     |
| $I_{th}$ rated thermal current, indoors, at 40°C shade ambient air temperature, in a specific dedicated enclosure   | 32 amps                                  |   |  |     |
| $I_{th}$ rated thermal current outdoors at 40°C shade ambient air temperature without solar effects in a specific dedicated enclosure rated IP66NW                      | 32 amps                                  |   |  |     |
| $I_{th}$ solar current value outdoors at 60°C shade ambient air temperature (see D.8.3.11, table D3), with solar effects in a specific dedicated enclosure rated IP66NW | 29 amps                                  |   |  |     |
|   | $U_c$ rated operational voltage DC Volts | $I_c$ , DC-PV2 rated operational current Amps | $I_{sc}$ and $I_{scmax}$ DC-PV2 4 x $I_c$ Amps |     |
| 4-pole<br>2 pole in series<br>4   | (1/2/—)                                  | 300   | 32   | 128 |
|   |  | 500   | 32   | 128 |
|   |  | 600   | 32   | 128 |
|   |  | 800   | 13   | 52  |
|   |  | 1000  | 9  | 36  |
|   |  | 1200  | 9  | 36  |
| 2-pole<br>4 pole in series<br>4B  | (1/2/3/4/—)                              | 300   | 32   | 128 |
|   |  | 500   | 32   | 128 |
|   |  | 600   | 32   | 128 |
|   |  | 800   | 32   | 128 |
|   |  | 1000  | 32   | 128 |
|   |  | 1200  | 32   | 128 |



## BYT Series Non-polarity DC Isolator Switches

Wiring Diagram for Rated operational voltage  $U_e(V)$  & Rated operational current  $I_e(A)$

| Contacts wiring diagram | 300V | 600V | 800V | 1000V | 1200V | Poles in series | Number of Strings | Type Number |
|-------------------------|------|------|------|-------|-------|-----------------|-------------------|-------------|
|                         | 32A  | 32A  | 13A  | 9A    | 9A    | 2               | 2                 | 4           |
|                         | 40A  | 40A  | /    | /     | /     | 2               | 1                 | 2H          |
|                         | 32A  | 32A  | 32A  | 32A   | 32A   | 2               | 1                 | 4B          |

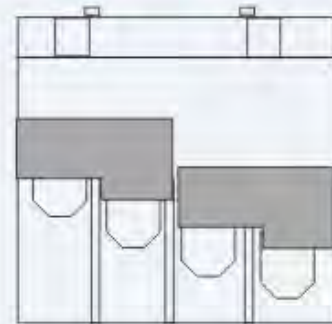
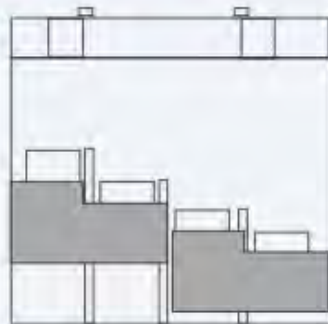
### Switching Configurations

| Type                  | 4-pole | 2-pole<br>4 Paralleled<br>Poles | 4-pole with Input<br>and<br>Output bottom |
|-----------------------|--------|---------------------------------|---|
| /                     | 4      | 2H                              | 4B  |
| Contacts Wiring graph |        |                                 |   |
| Switching example     |        |                                 |   |

### Bridgion Links Installation

Installed incorrectly

Installed correctly

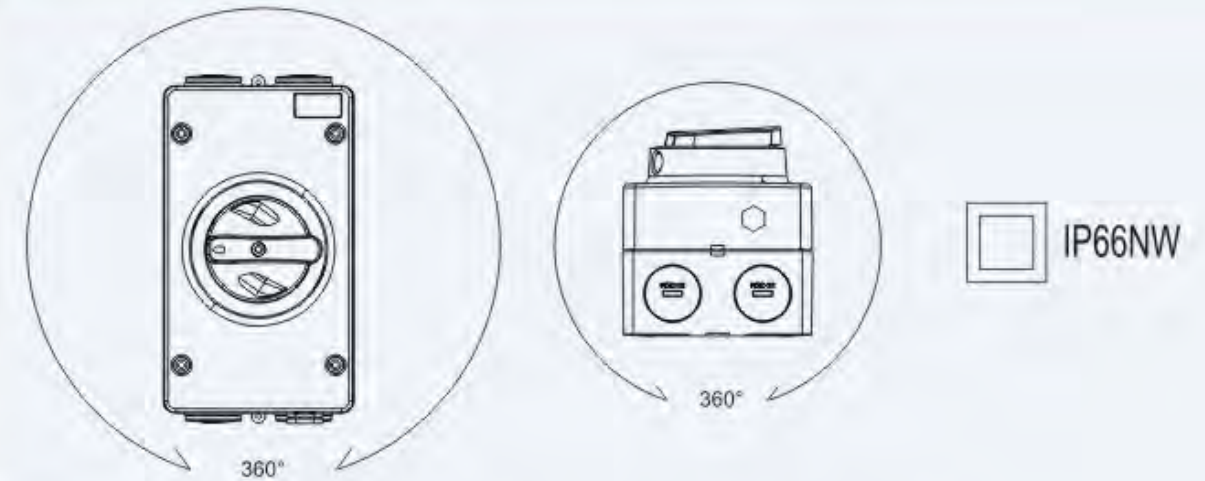


\* Warning: Verify that all connections (including bridging link connections) are suitable for the rated current, prepared to ensure only conductive parts are clamped and tightened to the manufacturers required torque before energization.

### Terminals / connection

| Type                                   | BYT-32, BYT-32M1, BYT-32M2, BYT-1-32, BYT-2-32 |  |
|--|--|--|
| Number of poles                        | 4-pole   |  |
| Terminal designation, main circuit     | 1; 3; 5; 2; 4; 6; 7; 8                         |  |
| Type of terminal, main circuit         | Screw terminal                                 |  |
| Rated cross section area, main circuit | 4.0-16mm <sup>2</sup>                          |  |
| Type of Conductor                      |  | 4-16mm <sup>2</sup> (Rigid: Solid or Stranded) |
|  |  | 4-10mm <sup>2</sup> (Flexible)                 |
| Number of conductors per terminal      | 1  |  |
| Required preparation of the conductor  | Yes  |  |
| Stripping length (mm), main circuit    | 8mm  |  |
| Tightening torque (M4), main circuit   | Min: 1.2Nm                                     |  |
|  | Max: 1.8Nm                                     |  |

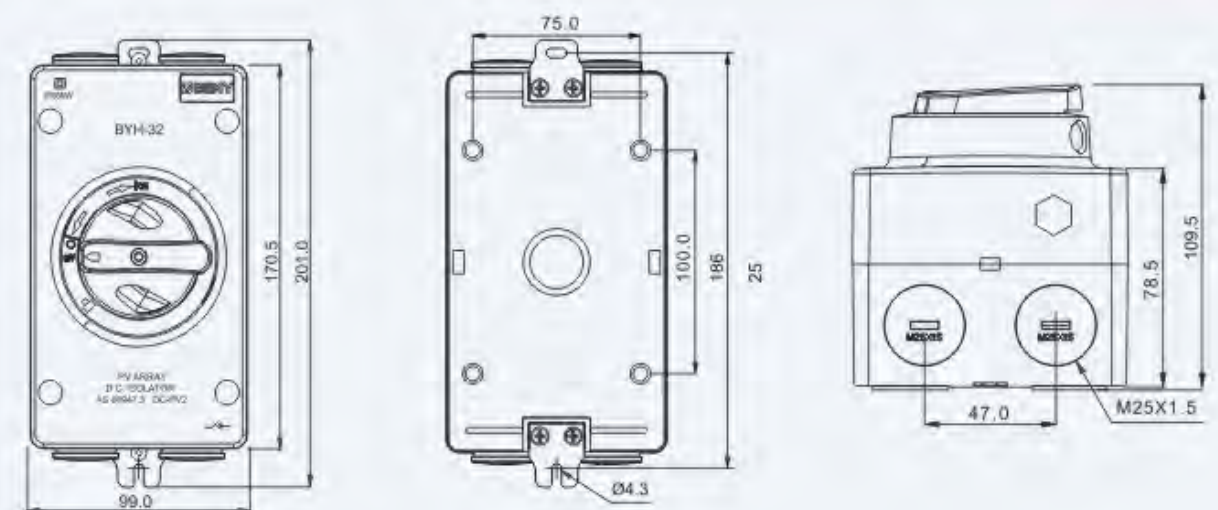
### IP Rating



Remarks:

ZJBENY DC Isolator can be installed in any direction, but must do well performance for waterproof.

### Dimensions(mm)





## BYT Series Non-polarity DC Isolator Switches

Data according to AS60947-3:2018

| Main Contacts                            |       | Type | BYT-32 | Appendix B5 |
|--|-------|------|--------|-------------|
| Rated thermal current $I_{th}$           |       | A    | 32     | Making &    |
| Rated insulation voltage $U_i$           |       | V    | 1200   | Breaking    |
| Distance of contacts (per pole)          |       | mm   | 8      | 5x          |
| Rated operational current $I_e$ (DC-PV2) |       |      |        | operations  |
| 1 pole<br>1                              | 300V  | A    | 25     | 100         |
|  | 400V  | A    | 10     | 40          |
|  | 500V  | A    | 8      | 32          |
|  | 600V  | A    | 8      | 32          |
|  | 800V  | A    | 3      | 12          |
| 1000V                                    | A     | 2    | 8      |             |
| 4-pole<br>2 pole in series<br>4          | 500V  | A    | 32     | 128         |
|  | 600V  | A    | 32     | 128         |
|  | 700V  | A    | 13     | 52          |
|  | 800V  | A    | 13     | 52          |
|  | 900V  | A    | 9      | 36          |
|  | 1000V | A    | 9      | 36          |
|  | 1200V | A    | 9      | 36          |
| 2-pole<br>4 parallel poles<br>2H         | 500V  | A    | 40     | 160         |
|  | 600V  | A    | 40     | 160         |
|  | 700V  | A    | /      | /           |
|  | 800V  | A    | /      | /           |
|  | 900V  | A    | /      | /           |
|  | 1000V | A    | /      | /           |
| 2-pole<br>4 pole in series<br>4B         | 500V  | A    | 32     | 128         |
|  | 600V  | A    | 32     | 128         |
|  | 700V  | A    | 32     | 128         |
|  | 800V  | A    | 32     | 128         |
|  | 900V  | A    | 32     | 32          |
|  | 1000V | A    | 32     | 32          |
|  | 1200V | A    | 32     | 32          |

## BYSS Series Non-polarity DC Isolator Switches 4P 1500V 35A



- 1 Waterproof Plug
- 2 IP66 Ingress Protection
- 3 Sealed Plug
- 4 Knob
- 5 Standard
- 6 Brand
- 7 Type
- 8 LOCK
- 9 ON
- 10 OFF

BYSS-50



### Application

**ZBENY** BYSS-50 true DC isolator switch in IP66 enclosure is developed for 1000V 1500V commercial solar rooftop, should be installed between solar panels and inverter for DC power isolation. Each poles up to 35A at 1500V or 50A at 1000V. A breather valve is attached on the enclosure bottom. Patent arc-extinguish chamber and UL listed qualify material ensure a highest level quality and solar DC safety.

### Feature

- IP66, UV Resistance
- Arcing Time < 3ms
- Earth Terminal
- IEC60947-3, AS60947.3
- 2 Poles, 4 Poles Available(Single | Double String)
- DC-PV2 / DC-21B: 35A up to 1500VDC

### Appearance Introduction



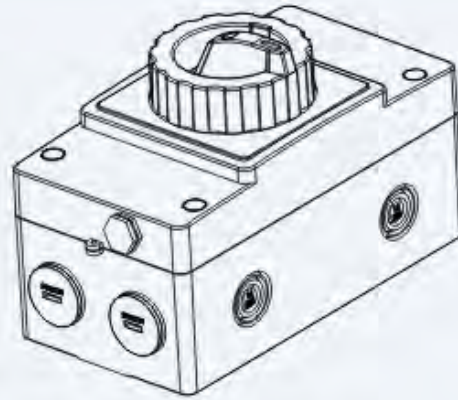
### Parameter

| Electrical Characteristics                           |  | BYSS-50, BYSS.1-50, BYSS.2-50 |
|--|--|-------------------------------|
| Type   | BYSS-50, BYSS.1-50, BYSS.2-50                              |                               |
| Function   | Isolator, Control  |                               |
| Standard   | IEC60947-3, AS60947.3                                      |                               |
| Utilization category                                 | DC-PV2 / DC-21B  |                               |
| Pole   | 4P   |                               |
| Rated frequency                                      | DC   |                               |
| Rated operational voltage ( $U_e$ )                  | 300V, 600V, 1000V, 1200V, 1500V                            |                               |
| Rated operational current ( $I_e$ )                  | See the next page  |                               |
| Rated insulation voltage ( $U_i$ )                   | 1200V  |                               |
| Conventional free air thermal current( $I_{th}$ )    | //   |                               |
| Conventional enclosed thermal current( $I_{th}$ )    | Same as $I_e$  |                               |
| Rated short-time withstand current ( $I_{sc}$ )      | 1.5kA, 1s  |                               |
| Rated short-time making capacity ( $I_{sc}$ )        | 2kA  |                               |
| Rated conditional short-circuit current ( $I_{sc}$ ) | 3kA  |                               |
| Rated impulsive withstand voltage ( $U_{imp}$ )      | 8.0kV  |                               |
| Overvoltage category                                 | II   |                               |
| Suitability for isolation                            | Yes  |                               |
| Polarity   | No polarity, "+" and "-" polarities could be interchanged. |                               |
| Service Life/Cycle Operation                         |  |                               |
| Mechanical   | 10000  |                               |
| Electrical   | 1000   |                               |
| Installation Environment                             |  |                               |
| Ingress Protection                                   | Enclosure  | IP66                          |
|  | Switch body  | IP20                          |
| Storage Temperature                                  | -50°C ~ +90°C  |                               |
| Operation Temperature                                | -40°C ~ +85°C  |                               |
| Mounting Type  | Vertically or horizontally                                 |                               |
| Pollution degree                                     | 3  |                               |
| Suitable environment                                 | Outdoor / Indoor   |                               |



## BYSS Series Non-polarity DC Isolator Switches

### Breathing Valve



Remarks:  
ZBENY DC Isolator has a breathing valve already, to avoid the condensation issue.

| Identification  |  | Rating data                                    |   |  |
|---|--|--|---|--|
| Switch, unenclosed - catalogue number (with DC-PV2 rating)  |  | BYSS.1-50, BYSS.2-50                           |   |  |
| Specific dedicated individual enclosure - catalogue number (with minimum IP56NW rating)   |  | BYSS-50 IP66NW                                 |   |  |
| Assembly of switch and specific dedicated individual enclosure - catalogue number   |  | /  |   |  |
| $I_{th}$ rated thermal current, unenclosed, at 40°C shade ambient air temperature   |  | 50 amps  |   |  |
| $I_{th}$ rated thermal current, indoors, at 40°C shade ambient air temperature, in a specific dedicated enclosure   |  | 50 amps  |   |  |
| $I_{th}$ rated thermal current outdoors at 40°C shade ambient air temperature without solar effects in a specific dedicated enclosure rated IP66NW                      |  | 50 amps  |   |  |
| $I_{th}$ solar current value outdoors at 60°C shade ambient air temperature (see D.8.3.11, table D3), with solar effects in a specific dedicated enclosure rated IP66NW |  | 50 amps  |   |  |
|   |  | $U_e$<br>rated operational voltage<br>DC Volts | $I_n$ : DC-PV2<br>rated operational current<br>Amps | $I_{max}$ and $I_{max}^{solar}$<br>DC-PV2 $4 \times I_n$<br>Amps |
| 2 pole<br>(1/2/—)   |  | ≤300   | 50  | 200  |
|   |  | 600  | 50  | 200  |
|   |  | 1000   | 50  | 200  |
|   |  | 1200   | 32  | 128  |
|   |  | 1500   | 16  | 64   |
| 4 pole<br>(1/2/3/4/—)   |  | ≤300   | 50  | 200  |
|   |  | 600  | 50  | 200  |
|   |  | 1000   | 50  | 200  |
|   |  | 1200   | 50  | 200  |
|   |  | 1500   | 35  | 140  |

### Wiring Diagram for Rated operational voltage $U_e(V)$ & Rated operational current $I_e(A)$

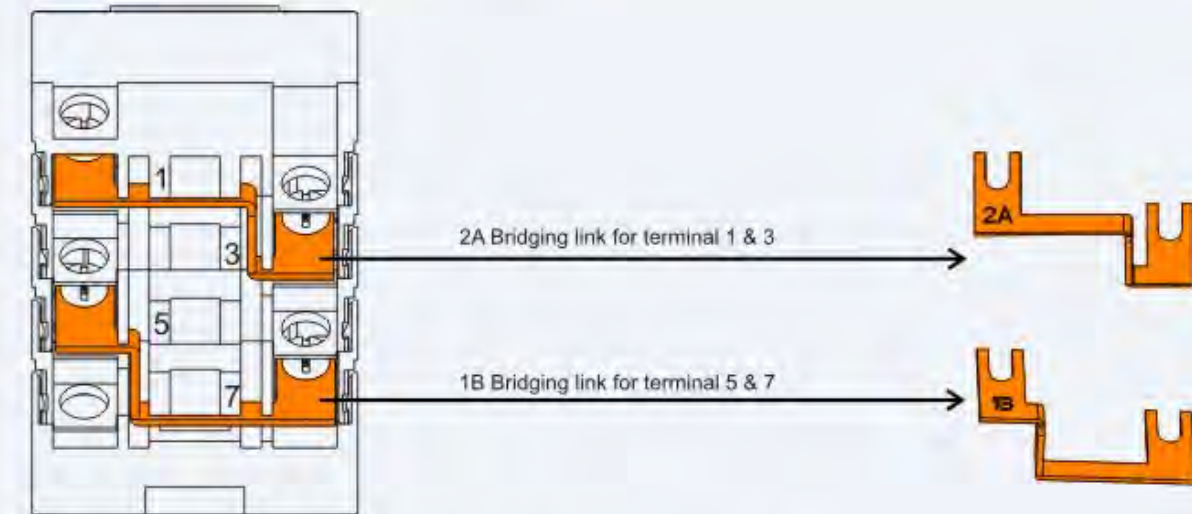
| Contacts wiring diagram | 300V | 600V | 1000V | 1200V | 1500V | Poles in series | Number of Strings | Type Number |
|-------------------------|------|------|-------|-------|-------|-----------------|-------------------|-------------|
|                         | 50A  | 50A  | 50A   | 32A   | 16A   | 2               | 2                 | 4           |
|                         | 50A  | 50A  | 50A   | 50A   | 35A   | 4               | 1                 | 4B          |

### Switching Configurations

| Type                  | 4-pole | 4-pole with Input and Output bottom |
|-----------------------|--------|-------------------------------------|
|                       | 4      | 4B                                  |
| Contacts Wiring graph |        |                                     |
| Switching example     |        |                                     |

### Bridgion Links Installation

#### Installed incorrectly



\* Warning: You must ensure all connections (including bridging link connections) are suitable for the rated current, prepared to ensure only conductive parts are clamped and tightened to the manufacturers required torque before energization.

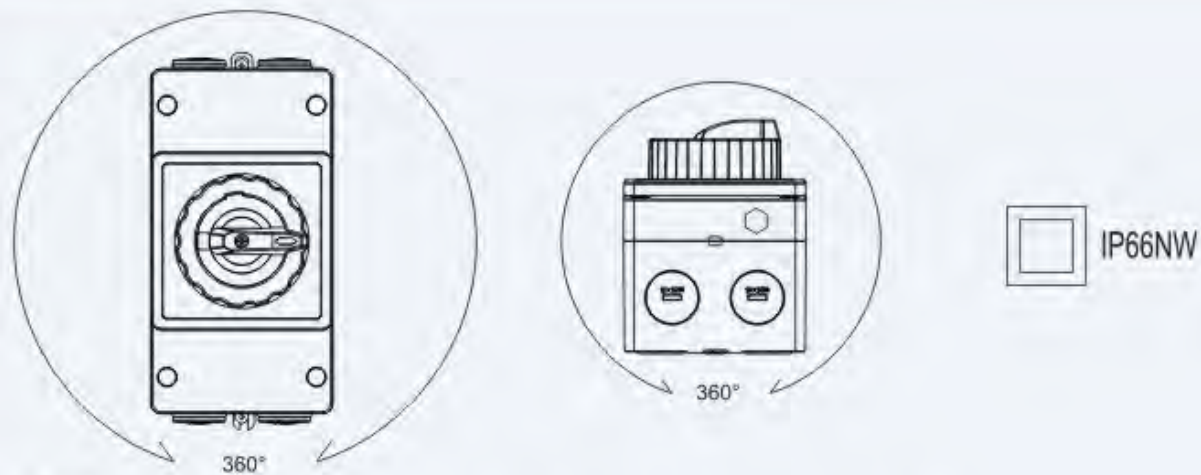


## BYSS Series Non-polarity DC Isolator Switches

### Terminals / connection

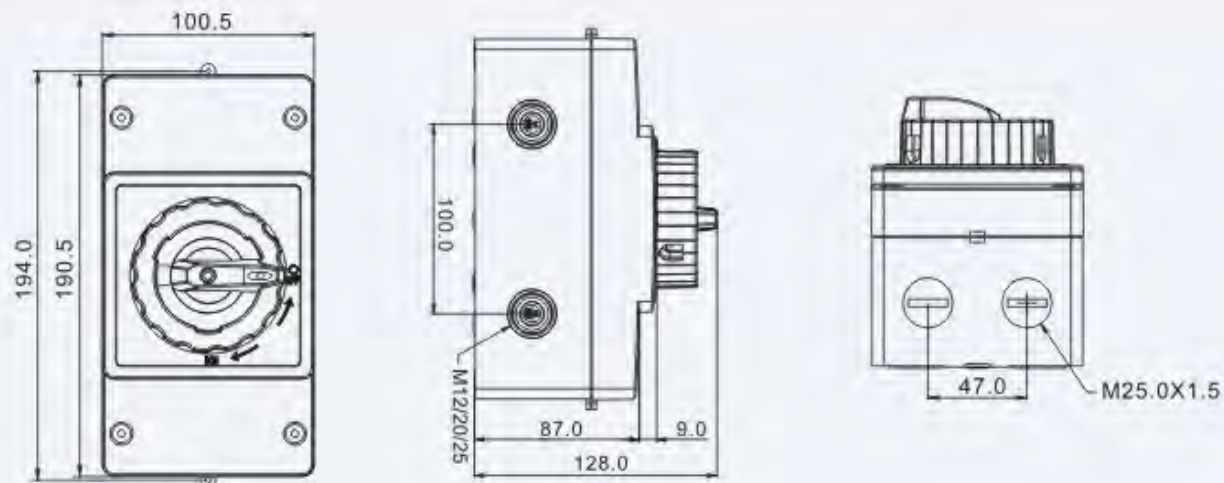
| Type                                   | BYSS-50, BYSS.1-50, BYSS.2-50  |
|--|--|
| Number of poles                        | 4-pole   |
| Terminal designation, main circuit     | 1; 3; 5; 2; 4; 6; 7; 8   |
| Type of terminal, main circuit         | Screw terminal   |
| Rated cross section area, main circuit | 4.0-16mm <sup>2</sup>  |
| Type of Conductor                      | 4-16mm <sup>2</sup> (Rigid: Solid or Stranded)<br>4-10mm <sup>2</sup> (Flexible) |
| Number of conductors per terminal      | 1  |
| Required preparation of the conductor  | Yes  |
| Stripping length (mm), main circuit    | 8mm  |
| Tightening torque (M4), main circuit   | Min: 1.2Nm<br>Max: 1.8Nm   |

### IP Rating

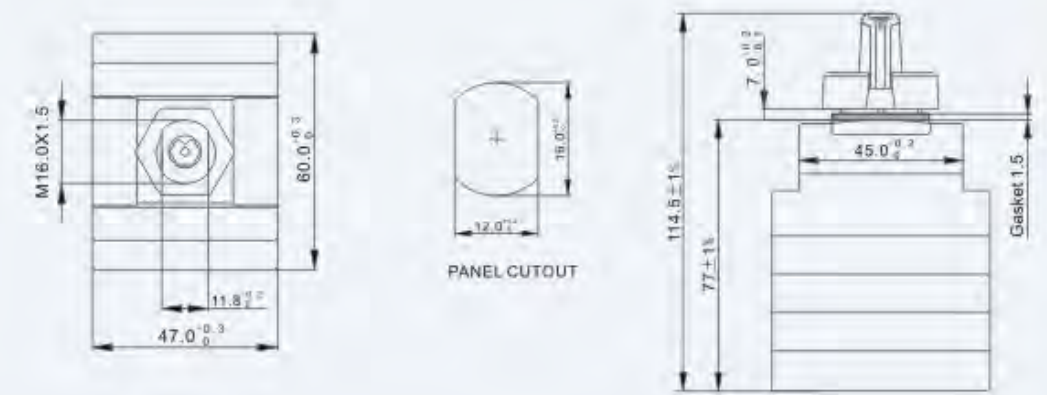


Remarks:  
ZBENY DC Isolator can be installed in any direction, but must do well performance for waterproof.

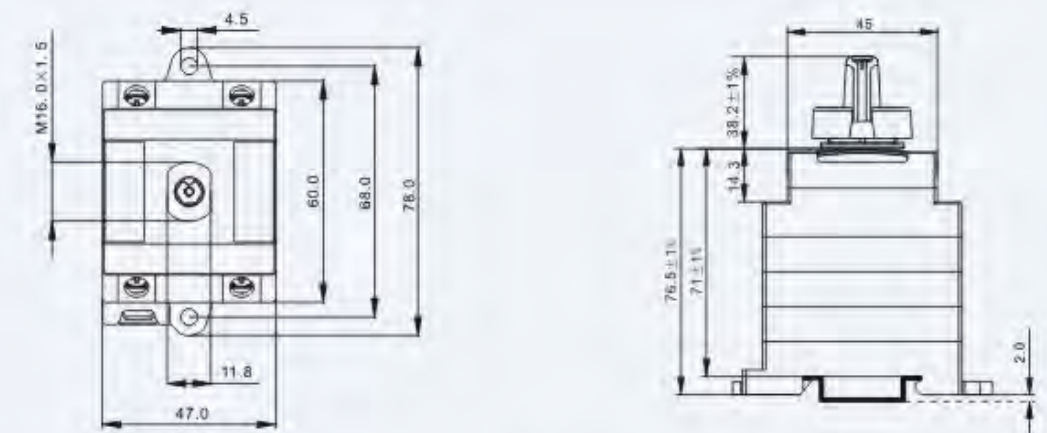
### Dimensions(mm)



BYSS.1-50  
Panel Mounting  
IP66

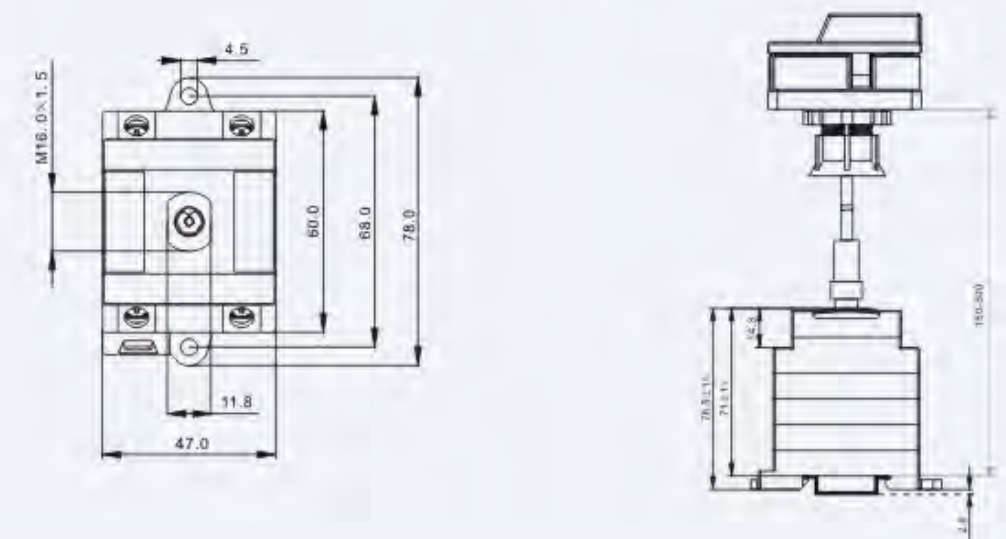


BYSS.2-50  
DIN Rail Mounting  
Lockable handle  
IP40



BYSS.2-50  
Base Mounting  
(Door coupling)  
Lockable handle  
IP66

Remarks: The handle length can be custom-made.





**BYSS Series  
Non-polarity DC Isolator Switches**

Data according to AS60947-3:2018

| Main Contacts                                     | Type  | BYSS-50 | Appendix B5 |     |
|---|-------|---------|-------------|-----|
| Rated thermal current $I_{th}$                    | A     | 35      | Making &    |     |
| Rated insulation voltage $U_i$                    | V     | 1500    | Breaking    |     |
| Distance of contacts (per pole)                   | mm    | 8       | 5x          |     |
| Rated operational current $I_e$ (DC-PV2)          |       |         | operations  |     |
| 1 pole<br>1<br><br>1/                             | 300V  | A       | 25          | 100 |
|   | 400V  | A       | 10          | 40  |
|   | 500V  | A       | 8           | 32  |
|   | 600V  | A       | 8           | 32  |
|   | 800V  | A       | 3           | 12  |
|   | 1000V | A       | 2           | 8   |
| 4-pole<br>2 pole in series<br>4<br><br>1/2/—      | 500V  | A       | 50          | 200 |
|   | 600V  | A       | 50          | 200 |
|   | 700V  | A       | 50          | 200 |
|   | 800V  | A       | 50          | 200 |
|   | 900V  | A       | 50          | 200 |
|   | 1000V | A       | 50          | 200 |
|   | 1200V | A       | 25          | 100 |
| 2-pole<br>4 pole in series<br>4B<br><br>1/2/3/4/— | 500V  | A       | 50          | 200 |
|   | 600V  | A       | 50          | 200 |
|   | 700V  | A       | 50          | 200 |
|   | 800V  | A       | 50          | 200 |
|   | 900V  | A       | 50          | 200 |
|   | 1000V | A       | 50          | 200 |
|   | 1200V | A       | 50          | 200 |
| 1500V   | A     | 35      | 140         |     |

**BYT.2**  
Series DC Isolator Switches







**Application**

**ZBENY** BYT.2 series DC Isolator Switches are applied to 1-20KW Inverter, Controller, DC Combiner Box, used for Residential or Commercial PV solar power system(on-grid/off-grid). Arcing time less than 3ms, that make PV solar system effectively disconnected.

**BYT.2-32 DC Isolator Switches**

- DIN Rail Mounting
- BYT.2 -32 Rated Voltage 1200V DC
- OFF LOCKABLE
- Flame-Retardant
- Arcing Time < 3ms
- IEC60947-3
- 4Poles(Single|Double Strings Available)
- DC-21B: 16A,25A,32A up to 1200V DC



**BYT.2-32 DC Isolator Switches**

- DIN Rail Mounting Door Clutch
- BYT.2-32 Rated Voltage 1200V DC
- OFF LOCKABLE
- Flame-Retardant
- Arcing Time < 3ms
- IEC60947-3
- 4 poles(Single|Double Strings Available)
- DC-21B: 16A,25A,32A up to 1200V DC



**Parameter**

| Electrical Characteristics                           |  |
|--|--|
| Type   | BYT.2-32   |
| Function   | Isolator, Control  |
| Standard   | IEC60947-3, AS60947.3                                      |
| Utilization category                                 | DC-PV2 / DC-21B  |
| Pole   | 4P   |
| Rated frequency                                      | DC   |
| Rated operational voltage ( $U_e$ )                  | 300V, 600V, 800V, 1000V, 1200V                             |
| Rated operational current ( $I_e$ )                  | See the next page  |
| Rated insulation voltage ( $U_i$ )                   | 1200V  |
| Conventional free air thermal current( $I_{fa}$ )    | //   |
| Conventional enclosed thermal current( $I_{fe}$ )    | Same as $I_e$  |
| Rated short-time withstand current ( $I_{sw}$ )      | 1kA, 1s (4, 4S, 4B); 1.7kA, 1s (2H)                        |
| Rated short-time making capacity ( $I_{sm}$ )        | 1.7kA, (4, 4S, 4B); 3kA, (2H)                              |
| Rated conditional short-circuit current ( $I_{sc}$ ) | 3kA  |
| Rated impulsive withstand voltage ( $U_{imp}$ )      | 8.0kV  |
| Overvoltage category                                 | II   |
| Suitability for isolation                            | Yes  |
| Polarity   | No polarity, "+" and "-" polarities could be interchanged. |
| Service Life/Cycle Operation                         |  |
| Mechanical   | 15000  |
| Electrical   | 1000   |
| Installation Environment                             |  |
| Ingress Protection                                   | IP20   |
| Storage Temperature                                  | -40°C ~ +85°C  |
| Mounting Type  | Vertically or horizontally                                 |
| Pollution degree                                     | 3  |
| Suitable environment                                 | Indoor   |



Accessories

| Identification   |  | Rating data                                    |   |   |
|--|--|--|---|---|
| Switch, unenclosed - catalogue number (with DC-PV2 rating)   |  | BYT.2-32                                       |   |   |
| Specific dedicated individual enclosure - catalogue number (with minimum IP56NW rating)  |  | BYT-32 IP66NW                                  |   |   |
| Assembly of switch and specific dedicated individual enclosure - catalogue number  |  | /  |   |   |
| $I_{fa}$ rated thermal current, unenclosed, at 40°C shade ambient air temperature  |  | 32 amps  |   |   |
| $I_{fe}$ rated thermal current, indoors, at 40°C shade ambient air temperature, in a specific dedicated enclosure  |  | 32 amps  |   |   |
| $I_{fo}$ rated thermal current outdoors at 40°C shade ambient air temperature without solar effects in a specific dedicated enclosure rated IP66NW                       |  | 32 amps  |   |   |
| $I_{fso}$ solar current value outdoors at 60°C shade ambient air temperature (see D.8.3.11, table D3), with solar effects in a specific dedicated enclosure rated IP66NW |  | 29 amps  |   |   |
|  |  | $U_e$<br>rated operational voltage<br>DC Volts | $I_e$ DC-PV2<br>rated operational current<br>Amps | $I_{(max)}$ and $I_{(1000s)}$<br>DC-PV2 4 x $I_e$<br>Amps |
| 2 pole<br>(1 / 2 / -)  |  | ≤600   | 32  | 128   |
|  |  | 800  | 13  | 52  |
|  |  | 1000   | 9   | 36  |
|  |  | 1200   | 9   | 36  |
| 4 pole<br>(1 / 2 / 3 / 4 / -)  |  | ≤600   | 32  | 128   |
|  |  | 800  | 32  | 128   |
|  |  | 1000   | 32  | 128   |
|  |  | 1200   | 32  | 128   |

NOTE 1 The rating data in the table is example data, it is intended to be replaced by the relevant actual data.

NOTE 2 The ratings section of this table for  $U_e$ ,  $I_e$  and  $I_{(max)}$  and  $I_{(1000s)}$  may have other number of poles or pole configurations than that shown, based on the test evidence obtained.

NOTE 3 The other data required in D.5.2.4 need not be in a table format.

**Wiring Diagram for Rated operational voltage  $U_e$ (V) & Rated operational current  $I_e$ (A)**

| Contacts wiring diagram | 600V | 800V | 1000V | 1200V | Poles in series | Number of Strings | Type Number | Weight kg/PCS |
|-------------------------|------|------|-------|-------|-----------------|-------------------|-------------|---------------|
|                         | 32A  | 13A  | 9A    | 9A    | 2               | 2                 | 4           | 0.70          |
|                         | 40A  | /    | /     | /     | 2               | 1                 | 2H          | 0.70          |
|                         | 32A  | 32A  | 32A   | 32A   | 2               | 1                 | 4B          | 0.70          |
|                         | 32A  | 32A  | 32A   | 32A   | 4               | 1                 | 4S          | 0.70          |



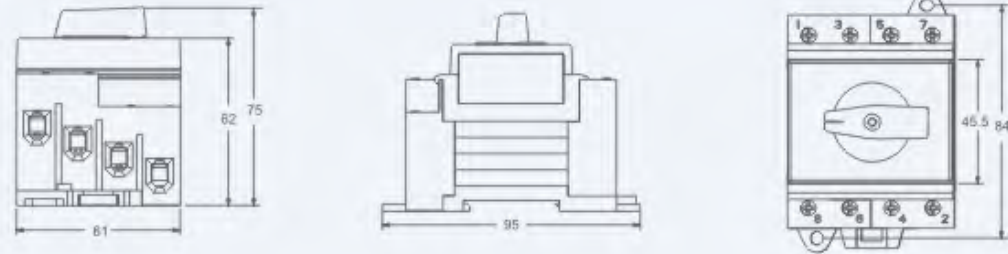
**BYT.2 Series  
PV DC Isolator Switches**

**Switching Configurations**

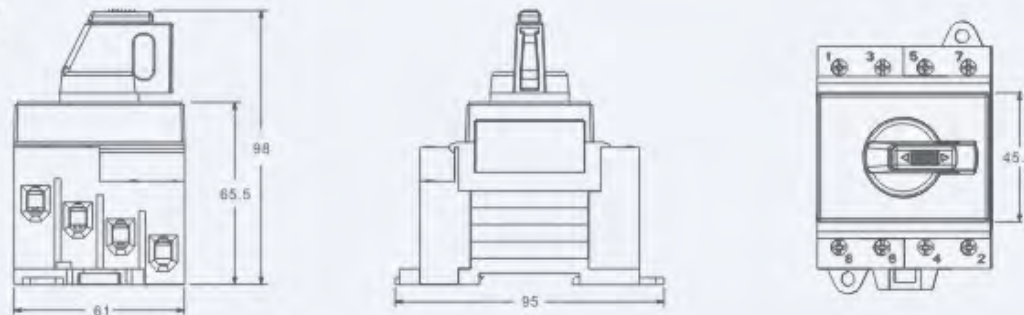
| Type                     | 4-pole | 2-pole<br>4 Paralleled<br>Poles | 4-pole with Input<br>and<br>Output bottom | 4-pole with Input<br>on top<br>Output bottom |
|--------------------------|--------|---------------------------------|---|--|
| /                        | 4      | 2H                              | 4B  | 4S   |
| Contacts<br>Wiring graph |        |                                 |   |  |
| Switching<br>example     |        |                                 |   |  |

**Dimensions(mm)**

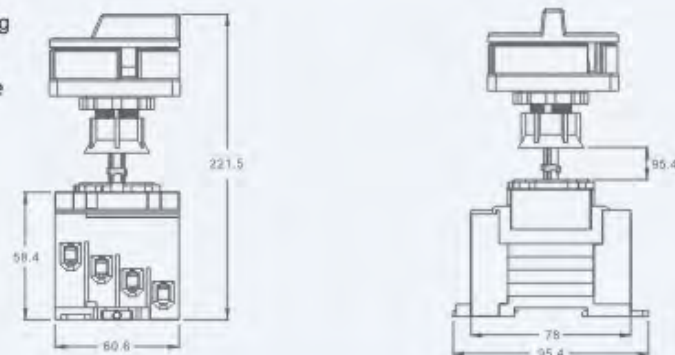
BYT.2-32  
DIN Rail Mounting



BYT.2-32  
DIN Rail Mounting  
Lockable handle



BYT.2-32  
DIN Rail Mounting  
Door Clutch  
Lockable handle



**BYSS.1**  
Series DC Isolator Switches

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[www.beny.com](http://www.beny.com)



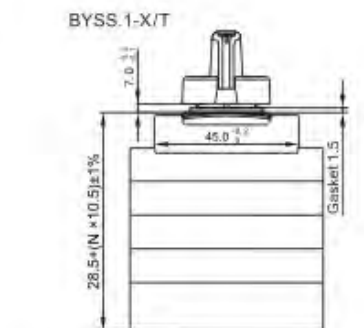
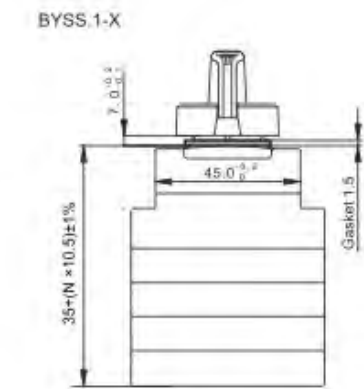
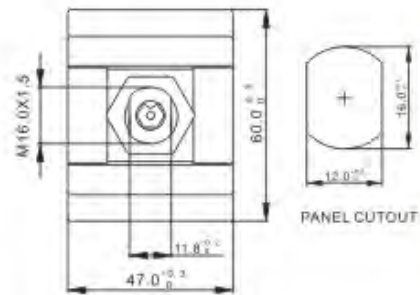




IEC/EN 60947-3:2015

- 1 Brand
- 2 Type
- 3 OFF
- 4 Application
- 5 Insulation voltage
- 6 Rated impulse withstand voltage
- 7 Rated Current
- 8 ON
- 9 Knob

**Dimensions(mm)**



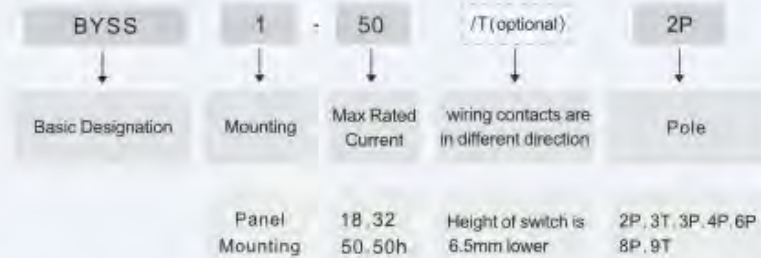
**Application**

**ZBENY** BYSS Series DC disconnect switch is used in 1-200KW solar inverter, 2P for 1 load up to 1200V 50A or 1600V 16A. low temperature rising, long worklife and short arcing time. For Multiple independent MPPTs.

**Appearance Introduction**



**Type Instruction**



**Parameter**

| Electrical Characteristics                       |      |                                       |
|--|------|---------------------------------------|
| Rated Working Voltage                            | Ue   | Details in diagram                    |
| Rated Current                                    | Ie   | Details in diagram                    |
| Conventional free air thermal current            | Ith  | 50A 60A(50h)                          |
| Rated impulse withstand voltage                  | Uimp | 8kV                                   |
| Rated short-time withstand current(1s)           | Icw  | 1.5kA                                 |
| Rated short-circuit making capacity              | Icm  | 2.0kA                                 |
| Rated conditional short-circuit current(kA)      |      | 8kA                                   |
| Installation Environment                         |      |                                       |
| Utilization category DC                          |      | DC-PV2                                |
| Number of cycles of operation(with current)      |      | 300                                   |
| Number of cycles of operation(without current)   |      | 10000                                 |
| Operation rate                                   |      | 120/h                                 |
| Pole   |      | 2/3/4/6/8/9                           |
| Mounting   |      | Panel mounting                        |
| Tightening torque terminal screws M4, min.-max.  |      | 1.2N·m~1.8N·m                         |
| Tightening torque panel mounting nut, min.-max.  |      | 2.5N·m±0.1N·m                         |
| Tightening torque M3 screw in the knob.min.-max. |      | 0.5N·m~0.7N·m                         |
| Ambient temperature allowed between              |      | -40°C ~ +85°C                         |
| Storage temperature allowed between              |      | -40°C ~ +85°C                         |
| Relative Humidity                                |      | 90%                                   |
| Pollution degree                                 |      | 2                                     |
| IP rating terminals                              |      | IP20                                  |
| IP rating panel                                  |      | IP66                                  |
| Wiring rating                                    |      | 14 AWG-8 AWG, Stranded 2.5mm²~10.0mm² |

**Wiring Diagram**

| Type  | Contact Configuration | Voltage |       |       |       |       |       |       |       | Poles in series | Number of Strings |
|---|-----------------------|---------|-------|-------|-------|-------|-------|-------|-------|-----------------|-------------------|
|   |                       | 800V    | 1000V | 1100V | 1200V | 1350V | 1400V | 1500V | 1600V |                 |                   |
| BYSS.1-18 2P<br>BYSS.1-32 2P<br>BYSS.1-50 2P<br>BYSS.1-50h 2P |                       | 25A     | 18A   |       | 15A   |       |       |       |       | 2               | 1                 |
|   |                       | 40A     | 32A   |       | 25A   |       |       |       |       | 2               | 1                 |
|   |                       | 50A     | 50A   |       | 40A   |       |       | 16A   |       | 2               | 1                 |
|   |                       |         |       | 60A   | 50A   | 40A   | 35A   | 30A   | 16A   | 2               | 1                 |
| BYSS.1-32-3P<br>BYSS.1-50-3P                                  |                       | 25A     | 20A   |       | 16A   |       |       |       |       | 2               | 2                 |
|   |                       | 32A     | 25A   |       | 20A   |       |       |       |       | 2               | 2                 |
| BYSS.1-50 3T  |                       |         |       |       | 50A   |       |       | 40A   |       | 3               | 1                 |
| BYSS.1-18 4P<br>BYSS.1-32 4P<br>BYSS.1-50 4P<br>BYSS.1-50h 4P |                       | 25A     | 18A   |       | 15A   |       |       |       |       | 2               | 2                 |
|   |                       | 40A     | 32A   |       | 25A   |       |       |       |       | 2               | 2                 |
|   |                       | 50A     | 50A   |       | 40A   |       |       | 16A   |       | 2               | 2                 |
|   |                       |         |       | 60A   | 50A   | 40A   | 35A   | 30A   | 16A   | 2               | 2                 |
| BYSS.1-18 6P<br>BYSS.1-32 6P<br>BYSS.1-50 6P<br>BYSS.1-50h 6P |                       | 25A     | 18A   |       | 15A   |       |       |       |       | 2               | 3                 |
|   |                       | 40A     | 32A   |       | 25A   |       |       |       |       | 2               | 3                 |
|   |                       | 50A     | 50A   |       | 40A   |       |       | 16A   |       | 2               | 3                 |
|   |                       |         |       | 60A   | 50A   | 40A   | 35A   | 30A   | 16A   | 2               | 3                 |
| BYSS.1-50 6T  |                       |         |       |       | 50A   |       |       | 40A   |       | 3               | 2                 |
| BYSS.1-18 8P<br>BYSS.1-32 8P<br>BYSS.1-50 8P<br>BYSS.1-50h 8P |                       | 25A     | 18A   |       | 15A   |       |       |       |       | 2               | 4                 |
|   |                       | 40A     | 32A   |       | 25A   |       |       |       |       | 2               | 4                 |
|   |                       | 50A     | 50A   |       | 40A   |       |       | 16A   |       | 2               | 4                 |
|   |                       |         |       | 60A   | 50A   | 40A   | 35A   | 30A   | 16A   | 2               | 4                 |
| BYSS.1-50 9T  |                       |         |       |       | 50A   |       |       | 40A   |       | 3               | 3                 |

**Switching Configurations**

| Type                    | 2P | 3P | 3T | 4P | 6P | 6T | 8P | 9T |
|-------------------------|----|----|----|----|----|----|----|----|
| Contacts Wiring diagram |    |    |    |    |    |    |    |    |
| Switching example       |    |    |    |    |    |    |    |    |



# BYSS.2

## Series DC Isolator Switches

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### BYSS.2 Series DC Isolator Switches



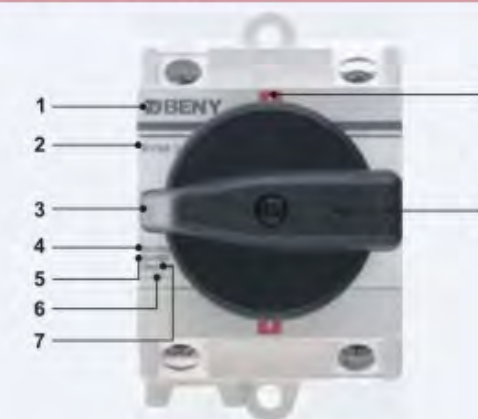
IEC/EN 60947-3:2015

- 1 Brand
- 2 Type
- 3 OFF
- 4 Application
- 5 Insulation voltage
- 6 Rated impulse withstand voltage
- 7 Rated Current
- 8 ON
- 9 Knob

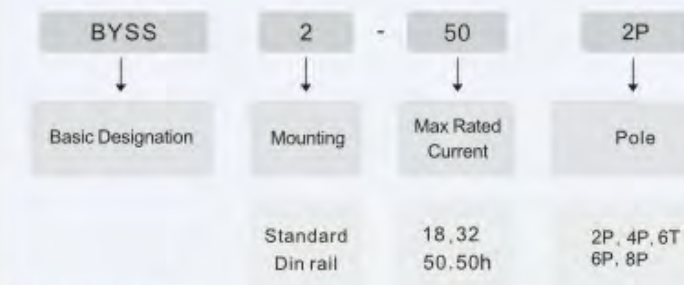
### Application

**BENY** BYSS Series DC disconnect switch is used in 1-200KW solar inverter, 2P for 1 load up to 1200V 50A or 1600V16A. low temperature rising, long work life and short arcing time. For Multiple independent MPPTs.

### Appearance Introduction

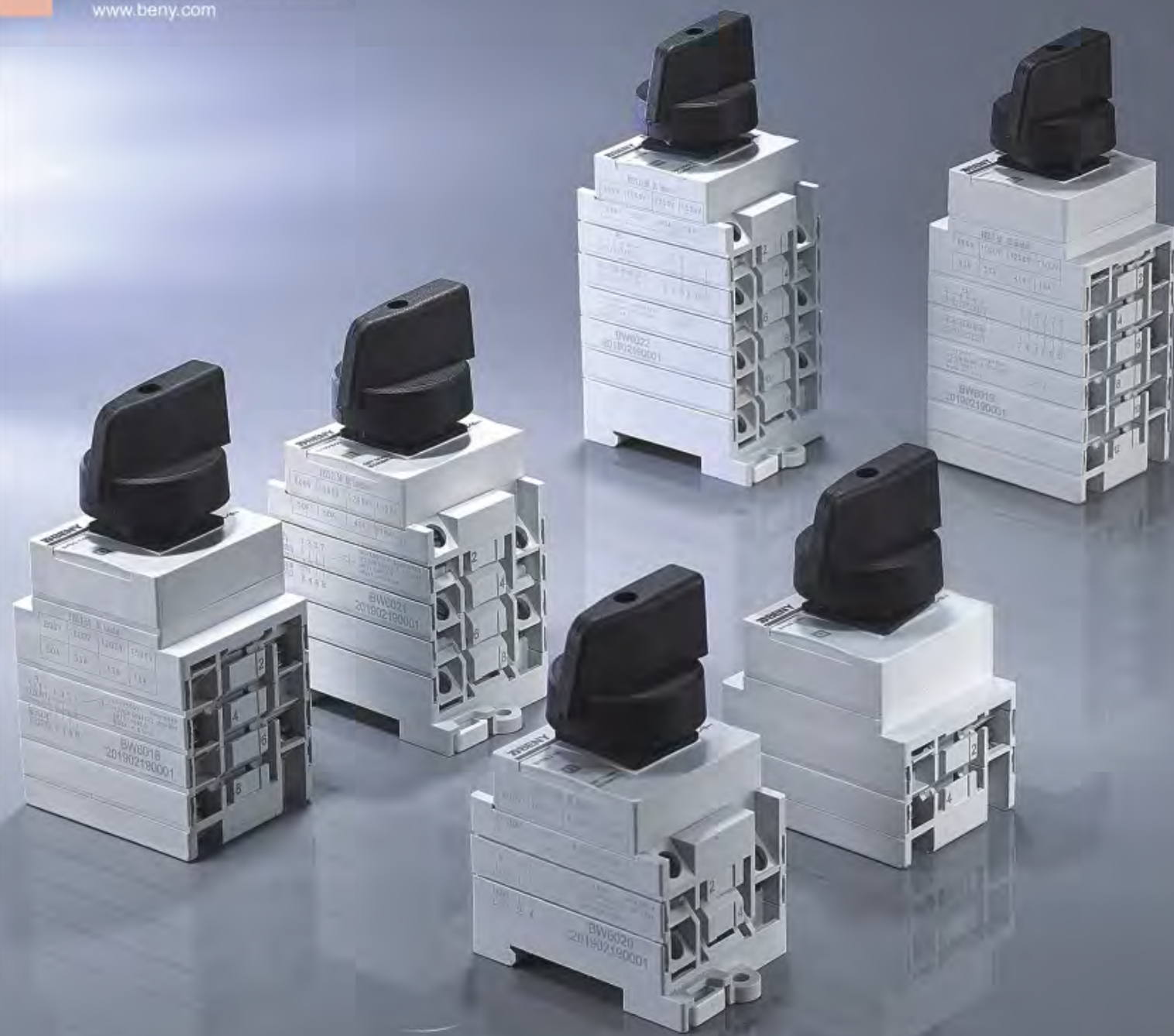


### Type Instruction




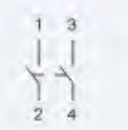



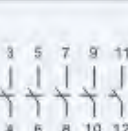



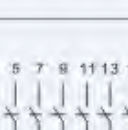
### Parameter

| Electrical Characteristics                       |                        |   |
|--|------------------------|---|
| Rated Working Voltage                            | Ue                     | Details in diagram                      |
| Rated Current                                    | Ie                     | Details in diagram                      |
| Conventional free air thermal current            | Ith                    | 50A      60A(50h)                       |
| Rated impulse withstand voltage                  | Uimp                   | 8kV                                     |
| Rated short-time withstand current(1s)           | Icw                    | 1.5kA                                   |
| Rated short-circuit making capacity              | Icm                    | 2.0kA                                   |
| Rated conditional short-circuit current(kA)      |                        | 8kA                                     |
| Installation Environment                         |                        |   |
| Utilization category DC                          |                        | DC-PV2                                  |
| Number of cycles of operation(with current)      |                        | 300                                     |
| Number of cycles of operation(without current)   |                        | 10000                                   |
| Operation rate                                   |                        | 120/h                                   |
| Pole   |                        | 2/4/6/8                                 |
| Mounting   |                        | Standard Din rail                       |
| Tightening torque terminal screws M4, min.-max.  |                        | 1.2N·m~1.8N·m                           |
| Tightening torque panel mounting nut, min.-max.  |                        | 2.5N·m±0.1N·m                           |
| Tightening torque M3 screw in the knob,min.-max. |                        | 0.5N·m~0.7N·m                           |
| Ambient temperature allowed between              |                        | -40°C ~ +85°C                           |
| Storage temperature allowed between              |                        | -40°C ~ +85°C                           |
| Relative Humidity                                |                        | 90%                                     |
| Pollution degree                                 |                        | 2                                       |
| IP rating terminals                              |                        | IP20                                    |
| IP rating panel                                  |                        | IP66                                    |
| Wiring rating                                    | 14 AWG-8 AWG, Stranded | 2.5mm <sup>2</sup> ~10.0mm <sup>2</sup> |















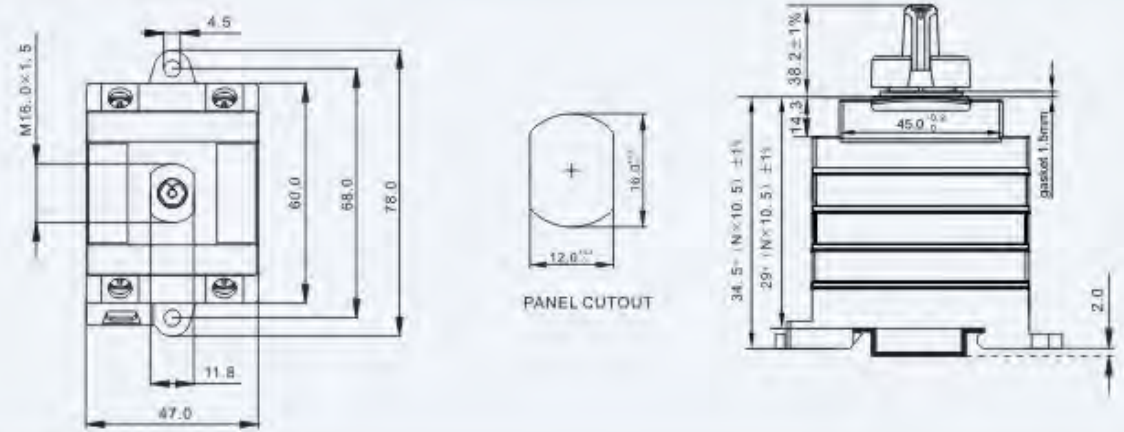
Wiring Diagram

| Type   | Contact Configuration | Voltage  |       |       |       |       |       |       | Poles in series | Number of Strings |
|--|-----------------------|--|-------|-------|-------|-------|-------|-------|-----------------|-------------------|
|  |                       | 800V   | 1000V | 1100V | 1200V | 1350V | 1400V | 1500V |                 |                   |
|   | BYSS.2-18 2P          |   | 25A   | 18A   | 15A   |       |       |       | 2               | 1                 |
|  | BYSS.2-32 2P          |  | 40A   | 32A   | 25A   |       |       |       | 2               | 1                 |
|  | BYSS.2-50 2P          |  | 50A   | 50A   | 40A   |       |       | 16A   | 2               | 1                 |
|  | BYSS.2-50h 2P         |  |       | 60A   | 50A   | 40A   | 35A   | 30A   | 16A             | 2                 |
|   | BYSS.2-18 4P          |   | 25A   | 18A   | 15A   |       |       |       | 2               | 2                 |
|  | BYSS.2-32 4P          |  | 40A   | 32A   | 25A   |       |       |       | 2               | 2                 |
|  | BYSS.2-50 4P          |  | 50A   | 50A   | 40A   |       |       | 16A   | 2               | 2                 |
|  | BYSS.2-50h 4P         |  |       | 60A   | 50A   | 40A   | 35A   | 30A   | 16A             | 2                 |
|   | BYSS.2-18 6P          |   | 25A   | 18A   | 15A   |       |       |       | 2               | 3                 |
|  | BYSS.2-32 6P          |  | 40A   | 32A   | 25A   |       |       |       | 2               | 3                 |
|  | BYSS.2-50 6P          |  | 50A   | 50A   | 40A   |       |       | 16A   | 2               | 3                 |
|  | BYSS.2-50h 6P         |  |       | 60A   | 50A   | 40A   | 35A   | 30A   | 16A             | 2                 |
|   | BYSS.2-50 6T          |   |       |       | 50A   |       |       | 40A   | 3               | 2                 |
|  | BYSS.2-18 8P          |  | 25A   | 18A   | 15A   |       |       |       | 2               | 4                 |
|  | BYSS.2-32 8P          |  | 40A   | 32A   | 25A   |       |       |       | 2               | 4                 |
|  | BYSS.2-50 8P          |  | 50A   | 50A   | 40A   |       |       | 16A   | 2               | 4                 |
|  | BYSS.2-50h 8P         |  |       | 60A   | 50A   | 40A   | 35A   | 30A   | 16A             | 2                 |

Switching Configurations

| Type                    | 2P  | 4P  | 6P  | 6T   | 8P  |
|-------------------------|---|---|---|--|---|
| Contacts Wiring diagram |  |  |  |  |  |
| Switching example       |  |  |  |  |  |

Dimensions(mm)



BYSS Series DC Isolator Switches



UL508i Certificate Number: E482690

- 1 Brand
- 2 Type
- 3 OFF
- 4 ON
- 5 Electrical symbol

BYSS.1-50/T



BYSS.2-50



BYSS.2-50 with S type handle knob



Application

BYSS series DC disconnect switch in UL version is the best DC switch solution for solar inverter integrated.

- The first DC switch UL508i certificate in China.
- 2P switch at max DC 1000V/30A or 750V/50A per conductor.
- With special arcing extinguish instruction and patent, for reliable and fastcutting off the DC arcing.
- The series are suitable for multiple independent MPPTs.
- Lockable handle for safer application and system maintain.

Appearance Introduction



Type Instruction



Parameter

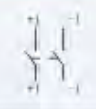
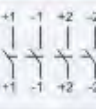






| Electrical Characteristics   |                |                     |
|--|----------------|---------------------|
| Rated Working Voltage  | Ue             | Details in diagram  |
| Rated Current  | Ie             | Details in diagram  |
| Rated impulse withstand voltage  | Uimp           | 8kV                 |
| Rated short-time withstand current (1s)                                | Icw            | 1.5kA               |
| Rated short-circuit making capacity                                    | Icm            | 2.0kA               |
| Standard Short Circuit Rating  |                | 5kA                 |
| High-Fault Short Circuit Rating  |                | 8kA                 |
| Installation Environment   |                |                     |
| Number of cycles of operation(With current)                            |                | 6000                |
| Number of cycles of operation(Without current)                         |                | 10000               |
| Pole   |                | 2/4/6/8             |
| Mounting   | Panel Mounting | Standard Din rail   |
| Tightening torque terminal screws M4 , min. - max. M4                  |                | 1.2N · m - 1.8N · m |
| Tightening torque panel mountig nut, min. - max.                       |                | 2.4N · m - 2.6N · m |
| Tightening torque M3 screw in the standard black knob, min. - max.     |                | 0.5N · m - 0.7N · m |
| Tightening torque M3 screw in the Extension rod type knob, min. - max. |                | 1.5N · m - 1.8N · m |
| Ambient temperature allowed between                                    |                | -40°C ~ +85°C       |
| Storage temperature allowed between                                    |                | -40°C ~ +85°C       |
| Relative Humidity  |                | 90%                 |
| Pollution degree   |                | 2                   |
| IP Class Protection  |                | ≥IP66 (Type 4X)     |



**Parameter**

| Type   | Rated Current(UL508) | 350V / 500V / 600V |       |   | Poles in series | Number of Strings |
|--|----------------------|--------------------|-------|---|-----------------|-------------------|
|  |                      | 750V               | 1000V |   |                 |                   |
| <br>BYSS.1-50/T-2<br>BYSS.2-50-2<br>Type S knob available   | 50A                  | 16A                | 16A   | 2 | 1               |                   |
|  |                      | 18A                |       |   |                 |                   |
|  |                      | 20A                |       |   |                 |                   |
|  |                      | 25A                |       |   |                 |                   |
|  |                      | 32A                |       |   |                 |                   |
|  |                      | 38A                |       |   |                 |                   |
|  |                      | 40A                |       |   |                 |                   |
|  |                      | 45A                |       |   |                 |                   |
| <br>BYSS.1-50/T-4<br>BYSS.2-50-4<br>Type S knob available   | 50A                  | 16A                | 16A   | 2 | 2               |                   |
|  |                      | 18A                |       |   |                 |                   |
|  |                      | 20A                |       |   |                 |                   |
|  |                      | 25A                |       |   |                 |                   |
|  |                      | 32A                |       |   |                 |                   |
|  |                      | 38A                |       |   |                 |                   |
|  |                      | 40A                |       |   |                 |                   |
|  |                      | 45A                |       |   |                 |                   |
| <br>BYSS.1-50/T-6<br>BYSS.2-50-6<br>Type S knob available  | 50A                  | 16A                | 16A   | 2 | 3               |                   |
|  |                      | 18A                |       |   |                 |                   |
|  |                      | 20A                |       |   |                 |                   |
|  |                      | 25A                |       |   |                 |                   |
|  |                      | 32A                |       |   |                 |                   |
|  |                      | 38A                |       |   |                 |                   |
|  |                      | 40A                |       |   |                 |                   |
|  |                      | 45A                |       |   |                 |                   |
| <br>BYSS.1-50/T-8<br>BYSS.2-50-8<br>Type S knob available | 50A                  | 16A                | 16A   | 2 | 4               |                   |
|  |                      | 18A                |       |   |                 |                   |
|  |                      | 20A                |       |   |                 |                   |
|  |                      | 25A                |       |   |                 |                   |
|  |                      | 32A                |       |   |                 |                   |
|  |                      | 38A                |       |   |                 |                   |
|  |                      | 40A                |       |   |                 |                   |
|  |                      | 45A                |       |   |                 |                   |
| 50A  |                      |                    |       |   |                 |                   |

**Switching Configurations**

| Type                    | 2P  | 4P  | 6P   | 8P  |
|-------------------------|---|---|--|---|
| Contacts Wiring diagram |  |  |  |  |
| Switching example       |  |  |  |  |

**Operation Knob Type**

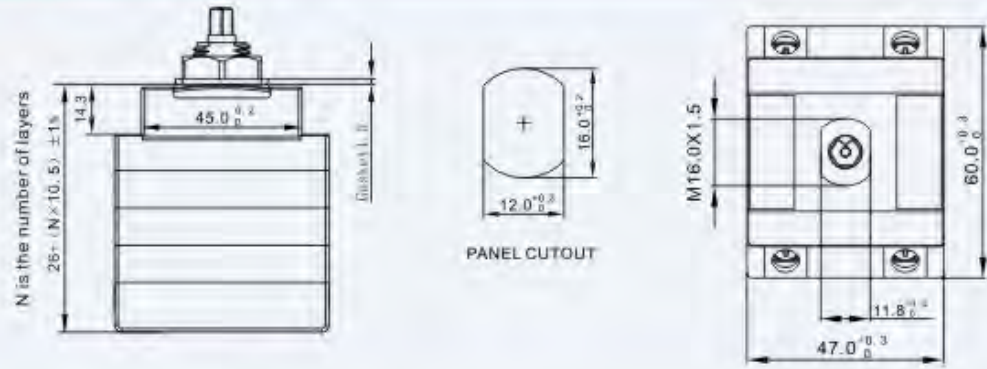
| Picture   | Suitable Type            | Structure details   |      |             |    |             |    |             |    |             |    |             |
|---|--------------------------|---|------|-------------|----|-------------|----|-------------|----|-------------|----|-------------|
|                          | BYSS.1-50/T<br>BYSS.2-50 |    |      |             |    |             |    |             |    |             |    |             |
| <br>S type handle knob | Only for<br>BYSS.2-50    |  <table border="1"> <thead> <tr> <th>Type</th> <th>H(min. max)</th> </tr> </thead> <tbody> <tr> <td>2P</td> <td>130mm-280mm</td> </tr> <tr> <td>4P</td> <td>150mm-300mm</td> </tr> <tr> <td>6P</td> <td>170mm-320mm</td> </tr> <tr> <td>8P</td> <td>190mm-340mm</td> </tr> </tbody> </table> | Type | H(min. max) | 2P | 130mm-280mm | 4P | 150mm-300mm | 6P | 170mm-320mm | 8P | 190mm-340mm |
| Type  | H(min. max)              |   |      |             |    |             |    |             |    |             |    |             |
| 2P  | 130mm-280mm              |   |      |             |    |             |    |             |    |             |    |             |
| 4P  | 150mm-300mm              |   |      |             |    |             |    |             |    |             |    |             |
| 6P  | 170mm-320mm              |   |      |             |    |             |    |             |    |             |    |             |
| 8P  | 190mm-340mm              |   |      |             |    |             |    |             |    |             |    |             |



Dimensions(mm)

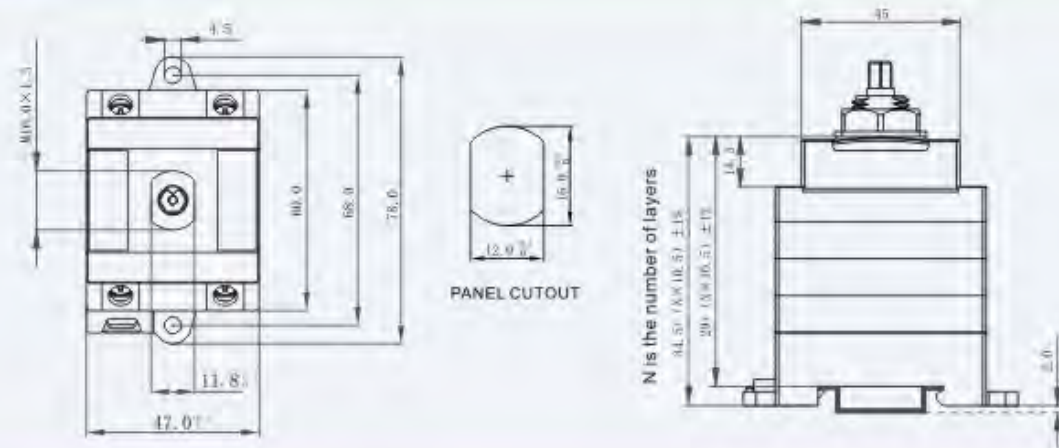
BYSS.1-50/T Series

mm



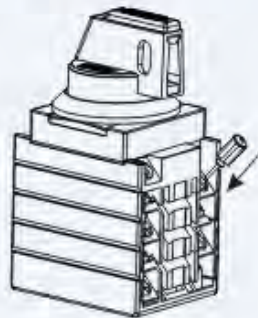
BYSS.2-50 Series

mm

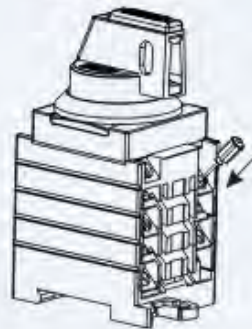


Wiring direction

BYSS.1-50/T



BYSS.2-50



Wiring Diagram

| Wires per pole | Conductor material | Wire size(AWG,mm <sup>2</sup> )                        | Torque |
|----------------|--------------------|--|--------|
| 1              | Copper (Cu)        | 12 AWG-6 AWG / 2.5mm <sup>2</sup> -10.0mm <sup>2</sup> | 1.8N·m |

BYSS Series  
DC Isolator Switches



UL508i Certificate Number: E482690

- 1 Brand
- 2 Type
- 3 OFF
- 4 ON
- 5 Electrical symbol

BYSS.1-50/T-1500V



BYSS.2-50-1500V



BYSS.2-50-1500V  
with S type handle knob



Application

- BYSS series DC disconnect switch in UL version is the best DC switch solution for solar inverter integrated.
- The first DC switch UL508i certificate in China.
  - 2P switch at max DC 1500V/13A per conductor.
  - With special arcing extinguish instruction and patent, for reliable and fast cutting off the DC arcing.
  - The series are suitable for multiple independent MPPTs.
  - Lockable handle for safer application and system maintain.

Appearance Introduction



Type Instruction

| BY                | SS           | .1                                       | - 50/T            | -2             | - 1500V       |
|-------------------|--------------|--|-------------------|----------------|---------------|
| Manufacturer Code | Product Code | Mounting                                 | Max Rated Current | Pole           | Rated Voltage |
| ZBENY             | Product Code | .1:Panel Mounting<br>2:Standard Din rail | 50A               | 2P, 4P, 6P, 8P | 1500V         |

Parameter


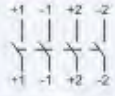




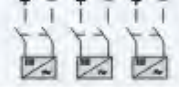

| Electrical Characteristics  |                |                     |
|---|----------------|---------------------|
| Rated Working Voltage   | Ue             | Details in diagram  |
| Rated Current   | Ie             | Details in diagram  |
| Rated impulse withstand voltage                                       | Uimp           | 8kV                 |
| Rated short-time withstand current (1s)                               | Icw            | 1.5kA               |
| Rated short-circuit making capacity                                   | Icm            | 2.0kA               |
| Standard Short Circuit Rating   |                | 5kA                 |
| High-Fault Short Circuit Rating                                       |                | 8kA                 |
| Installation Environment  |                |                     |
| Number of cycles of operation(With current)                           |                | 6000                |
| Number of cycles of operation(Without current)                        |                | 10000               |
| Pole  |                | 2/4/6/8             |
| Mounting  | Panel Mounting | Standard Din rail   |
| Tightening torque terminal screws M4 , min. - max M4                  |                | 1.2N · m - 1.8N · m |
| Tightening torque panel mounting nut, min. - max.                     |                | 2.4N · m - 2.6N · m |
| Tightening torque M3 screw in the standard black knob, min. -max.     |                | 0.5N · m - 0.7N · m |
| Tightening torque M3 screw in the Extension rod type knob, min. -max. |                | 1.5N · m - 1.8N · m |
| Ambient temperature allowed between                                   |                | -40°C ~ +85°C       |
| Storage temperature allowed between                                   |                | -40°C ~ +85°C       |
| Relative Humidity   |                | 90%                 |
| Pollution degree  |                | 2                   |
| IP Class Protection   |                | ≥IP66 (Type 4X)     |



**Parameter**

| Type   |  | Rated Current(UL508)<br>1500V | Poles<br>in series | Number<br>of Strings |
|--|--|-------------------------------|--------------------|----------------------|
| <br>BYSS.1-50/T-2-1500V   | <br>BYSS.2-50-2-1500V<br><small>Type S knob available</small>   | 13A                           | 2                  | 1                    |
| <br>BYSS.1-50/T-4-1500V   | <br>BYSS.2-50-4-1500V<br><small>Type S knob available</small>   | 13A                           | 2                  | 2                    |
| <br>BYSS.1-50/T-6-1500V  | <br>BYSS.2-50-6-1500V<br><small>Type S knob available</small>  | 13A                           | 2                  | 3                    |
| <br>BYSS.1-50/T-8-1500V | <br>BYSS.2-50-8-1500V<br><small>Type S knob available</small> | 13A                           | 2                  | 4                    |

**Switching Configurations**

| Type                               | 2P  | 4P  | 6P   | 8P  |
|------------------------------------|---|---|--|---|
| <b>Contacts<br/>Wiring diagram</b> |  |  |  |  |
| <b>Switching<br/>example</b>       |  |  |  |  |

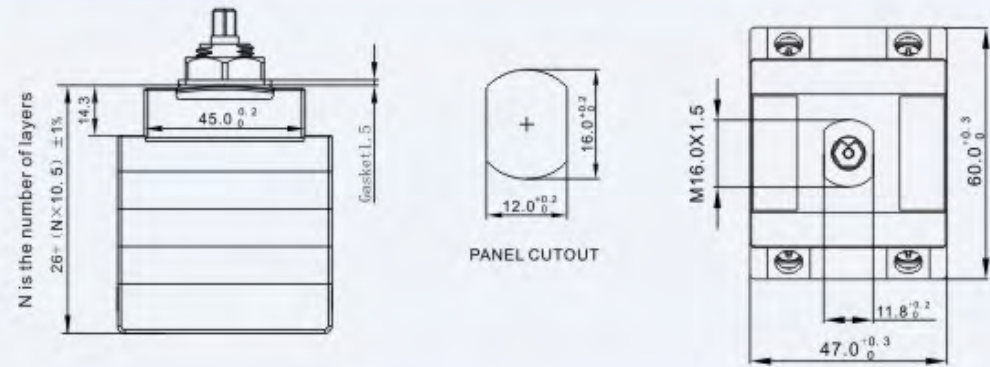
**Operation Knob Type**

| Picture   | Suitable Type                        | Structure details  |      |             |    |             |    |             |    |             |    |             |
|---|--------------------------------------|--|------|-------------|----|-------------|----|-------------|----|-------------|----|-------------|
|    | BYSS.1-50/T-1500V<br>BYSS.2-50-1500V |  <p>Lockable</p> <p>Mounting panel</p> <p>1.5-3mm</p>  <p>Lock position<br/>(Switch Off, then<br/>Shift forth r the<br/>indicator)</p>   |      |             |    |             |    |             |    |             |    |             |
|  | Only for<br>BYSS.2-50-1500V          |  <p>H</p> <table border="1"> <thead> <tr> <th>Type</th> <th>H(min. max)</th> </tr> </thead> <tbody> <tr> <td>2P</td> <td>130mm-280mm</td> </tr> <tr> <td>4P</td> <td>150mm-300mm</td> </tr> <tr> <td>6P</td> <td>170mm-320mm</td> </tr> <tr> <td>8P</td> <td>190mm-340mm</td> </tr> </tbody> </table> | Type | H(min. max) | 2P | 130mm-280mm | 4P | 150mm-300mm | 6P | 170mm-320mm | 8P | 190mm-340mm |
| Type  | H(min. max)                          |  |      |             |    |             |    |             |    |             |    |             |
| 2P  | 130mm-280mm                          |  |      |             |    |             |    |             |    |             |    |             |
| 4P  | 150mm-300mm                          |  |      |             |    |             |    |             |    |             |    |             |
| 6P  | 170mm-320mm                          |  |      |             |    |             |    |             |    |             |    |             |
| 8P  | 190mm-340mm                          |  |      |             |    |             |    |             |    |             |    |             |

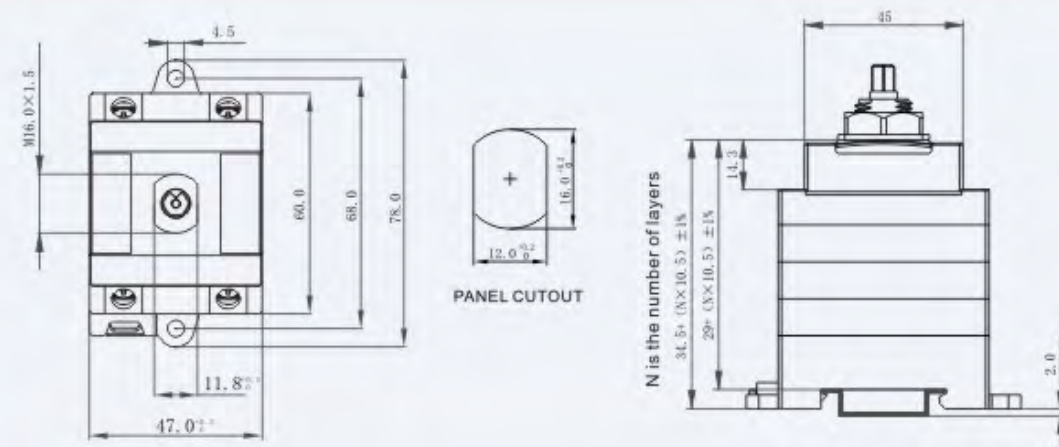


**Dimensions(mm)**

BYSS.1-50/T Series mm

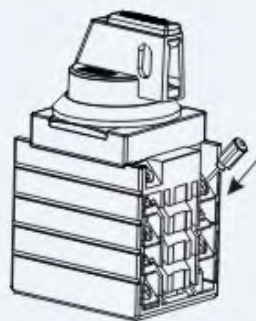


BYSS.2-50 Series mm

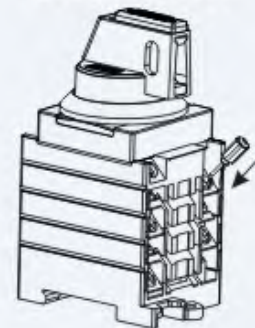


**Wiring direction**

BYSS.1-50/T-1500V



BYSS.2-50-1500V



**Wiring Diagram**

| Wires per pole | Conductor material | Wire size(AWG,mm <sup>2</sup> )                        | Torque |
|----------------|--------------------|--|--------|
| 1              | Copper (Cu)        | 12 AWG-6 AWG / 2.5mm <sup>2</sup> -10.0mm <sup>2</sup> | 1.8N·m |

# BYH/BYT

## Series DC Isolator Switches

Welcome to your website for more information:

[www.beny.com](http://www.beny.com)







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

- Nonpolarity
- Functions: Unfrequent operation and Isolation
- Rated Current: Up to 63A
- Rated Voltage: 1200V DC
- Flash Barrier Keep System More Safe
- Comply with: IEC 60947-3/GB/T 14048.3

**Application**

ZBENY BB1 Series PV DC Isolator switches are mainly be used in PV solar power system, which are applied for DC solar combiner box, controller etc. The Max voltage up to 1200V DC, current up to 63A ,with the function of effective disconnection and Anti-reflux protection. Scientific design of arc-extinguishing system keep PV system more safe.

**Appearance Introduction**



**Type Instruction**

|                         |   |                   |                      |                   |                               |
|-------------------------|---|-------------------|----------------------|-------------------|-------------------------------|
| BB1H                    | - | 63                | 4P                   | 25                | 1200V                         |
| Product Code            |   | Max Rated Current | Pole                 | Rated Current     | Rated Voltage                 |
| PV DC Isolator Switches |   | 63A               | 1P<br>2P<br>3P<br>4P | 25A<br>40A<br>63A | 300V<br>600V<br>900V<br>1200V |

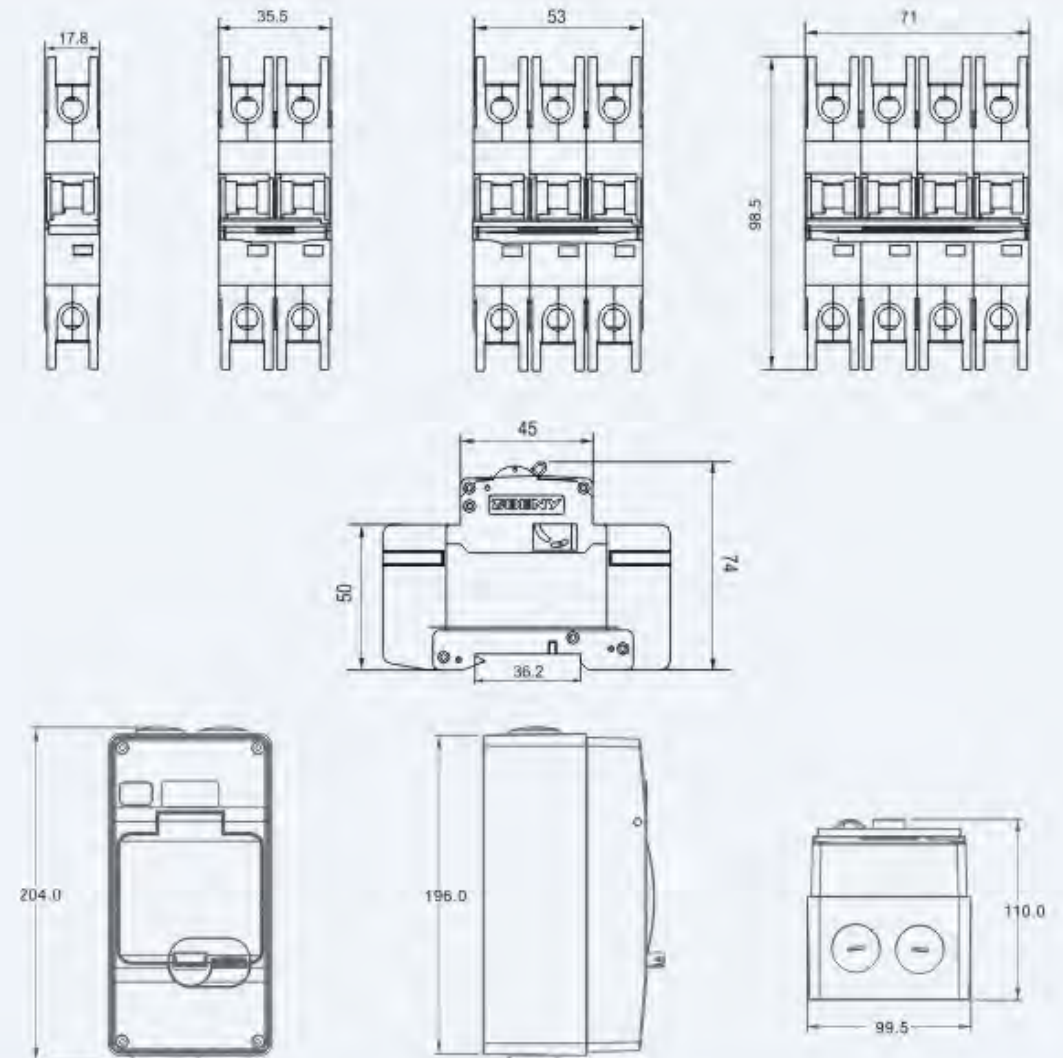
**Parameter**

| Electrical Characteristics      |   | BB1H-63 |         |          |  |
|---------------------------------|---|---------|---------|----------|--|
| Type                            | BB1H-63   |         |         |          |  |
| Comply With                     | IEC60947-3/GB/T14048.3                                  |         |         |          |  |
| Pole                            | 1P  | 2P      | 3P      | 4P       |  |
| Rated Working Voltage Ue        | 300V DC   | 600V DC | 900V DC | 1200V DC |  |
| Max Rated Current               | 63A   |         |         |          |  |
| Rated Current In                | 25A,40A,63A   |         |         |          |  |
| Rated Insulated Voltage Ui      | 1200V DC  |         |         |          |  |
| Rated Impuled Voltage Uimp      | 6KV   |         |         |          |  |
| Service Life/cycle Operation    |   |         |         |          |  |
| Mechanical                      | Actual Value  | 10000   |         |          |  |
|                                 | Standard Value  | 9700    |         |          |  |
| Electrical                      | Actual Value  | 1000    |         |          |  |
|                                 | Standard Value  | 300     |         |          |  |
| Isolator Function               | Yes   |         |         |          |  |
| 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 humidity arrived to 55°C,relative humidity95%) |         |         |          |  |
| Resistance to Shock             | 2.6 IEC60068  |         |         |          |  |
| Resistance to Impack            | 2.27 IEC60068   |         |         |          |  |

**Wiring Method**

| Pole                  | 1P |    | 2P |    | 3P |    | 4P |  |
|-----------------------|----|----|----|----|----|----|----|--|
| Type                  |    |    |    |    |    |    |    |  |
| Contacts Wiring graph | 1A | 2A | 2B | 3A | 3B | 4A | 4B |  |
|                       |    |    |    |    |    |    |    |  |

**Dimensions(mm)**





# BDH

## BDH Series PV DC Moulded Case Isolator Switch

Welcome to our website for more information  
www.beny.com



### BDH Series PV DC Moulded Case Isolator Switches



- 1 Brand
- 2 Type
- 3 Rated Current
- 4 Rated Voltage
- 5 Rated Short-time Withstand Current
- 6 Standard Code
- 7 Certificate Symbol
- 8 Wiring Diagram

- High Insulation Performance
- Functions: Unfrequent Operation and Isolation
- Rated Voltage up to 1200V
- Rated Current 125A, 250A
- IEC60947-3, GB14048-3

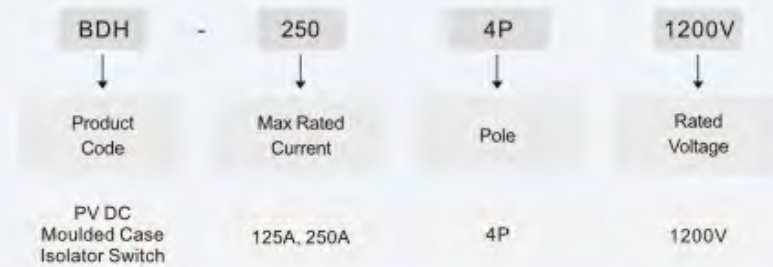
### Application

**ZBENY** BDH series PV DC Moulded Case Isolator Switches are mainly used in large solar power system, such like solar DC combiner box ,inverter and DC power distribution cabinet. Rated voltage up to 1200V DC, Rated Current up to 250A with the function of effective isolator.

### Appearance Introduction



### Type Instruction



### Parameter

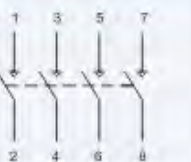
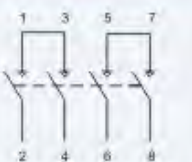
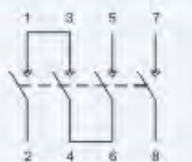
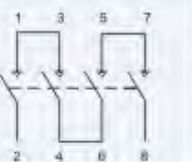
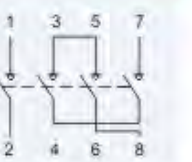
| BDH series PV DC Moulded Case Isolator Switch |  |                    |
|---|--|--------------------|
| Type  | BDH-125                                  | BDH-250            |
| Pole  | 4P                                       |                    |
| Max Rated Current                             | 125A                                     | 250A               |
| Electrical Characteristics                    |  |                    |
| Rated Working Voltage U <sub>e</sub>          | 1200V DC                                 |                    |
| Rated Current I <sub>n</sub> (A)              | 63/80<br>100/125                         | 125/160<br>200/250 |
| Rated Insulated Voltage U <sub>i</sub>        | 1200V DC                                 |                    |
| Rated Impulsed Voltage U <sub>imp</sub>       | 8KV                                      |                    |
| 1 Min Power Frequency Withstand Voltage       | 3.8KV                                    |                    |
| Control And Indication                        |  |                    |
| Control Mode                                  | Manual                                   | Direct (RHD)       |
|   |  | Extended(ERH)      |
|   | MOD                                      |                    |
| Shunt Release (SHT)                           | Optional                                 |                    |
| Auxiliary Release                             | Optional                                 |                    |
| Terminal End Cover                            | Yes                                      |                    |
| Interphase Barriers                           | Yes                                      |                    |
| Service Life/Cycle Operation                  |  |                    |
| Mechanical                                    | 10000                                    | 10000              |
| Electrical                                    | 2000                                     | 2000               |
| Size (L x W x H)                              | 150.5x122x92.5                           | 165x140x88         |
| Ingress Protection                            | All Sides IP40 ,Connection Terminal IP20 |                    |
| Installation Environment                      |  |                    |
| Comply with                                   | IEC60947-3/GB14048.3                     |                    |
| Storage Temperature                           | -40°C ~ +85°C                            |                    |



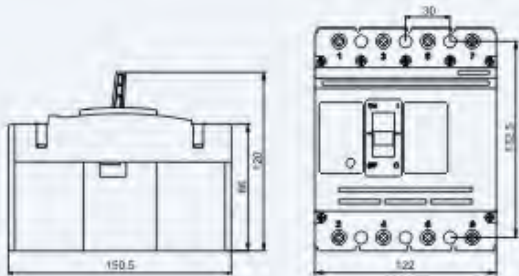
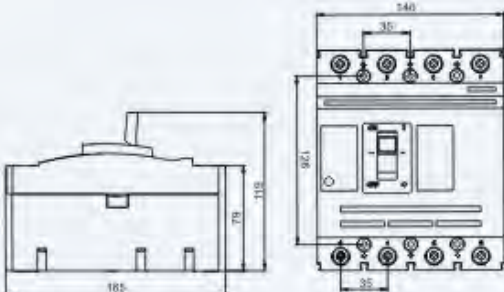
## BDH Series PV DC Moulded Case Isolator Switches

| Type    | BDH-125   | BDH-250   |
|---------|---|---|
| Picture |  |  |

### Wiring Method

| Type Code             | 4A  | 4B  | 4C  | 4D   | 4S  |
|-----------------------|---|---|---|--|---|
| Contacts Wiring graph |  |  |  |  |  |

### Dimensions(mm)

| 125A  | 250A   |
|---|--|
|  |  |

## BH-250 Series PV DC Isolation Switch



IEC/EN 60947-3  
GB T 14048.3

- 1 Brand
- 2 Model
- 3 On Off
- 4 Rated Current
- 5 Nominal Insulation Voltage
- 6 Rated Withstand Voltage
- 7 Utilization Category
- 8 Auxiliary Contact
- 9 Lockable Handle
- 10 Rated Voltage
- 11 Certificate Mark
- 12 Electrical Symbol

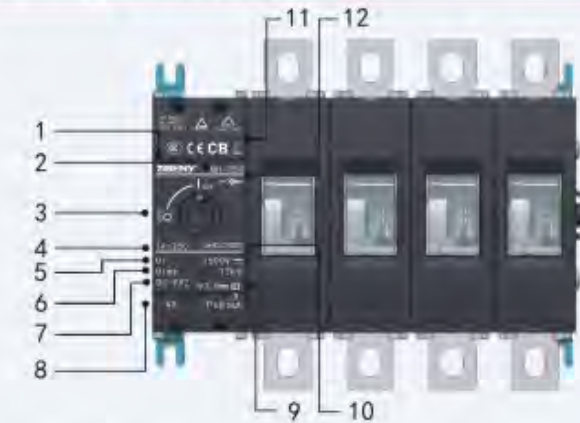


### Application

**ZBENY** BH-250 DC disconnect switch is designed and developed for solar PV inverter, combiner box or any DC equipments build-in according to IEC60947-3. The DC load break switches provide safety isolation for one DC circuit up to 1500VDC/250 A.

High capacity 10kA for 50ms test and patented DC arc extinguishing chamber ensure fast disconnection and reliable operation for longer working life.

### Appearance Introduction



### Type Instruction

|                        |   |             |   |   |   |  |   |  |   |   |
|------------------------|---|-------------|---|---|---|--|---|--|---|---|
| BH                     | - | 250         | - | 4P  | - | 250A   | - | A  | - | A X   |
| ↓                      |   | ↓           |   | ↓   |   | ↓  |   | ↓  |   | ↓   |
| Model                  |   | Max Current |   | Pole  |   | Rated Current  |   | Assembling way   |   | Auxiliary contact   |
| PV DC Isolation Switch |   | 250A        |   | <input type="checkbox"/> 2P<br><input type="checkbox"/> 3P<br><input type="checkbox"/> 4P |   | <input type="checkbox"/> 80A <input type="checkbox"/> 100A<br><input type="checkbox"/> 125A <input type="checkbox"/> 160A<br><input type="checkbox"/> 200A <input type="checkbox"/> 250A |   | <input type="checkbox"/> Blank<br><input type="checkbox"/> A <input type="checkbox"/> B<br><input type="checkbox"/> A1 <input type="checkbox"/> B1 |   | <input type="checkbox"/> without<br><input type="checkbox"/> with |

### Parameter

| Electrical Characteristics                     |      |                               |
|--|------|-------------------------------|
| Rated Working Voltage                          | Ue   | 1000V \ 1500V                 |
| Rated Current                                  | Ie   | 250A                          |
| Rated impulse withstand voltage                | Uimp | 12kV                          |
| Rated short-time withstand current (1s)        | Icw  | 8kA                           |
| Rated short-circuit making capacity            | Icm  | 10kA                          |
| Rated conditional short-circuit current(kA)    |      | 10kA                          |
| Installation Environment                       |      |                               |
| Utilization category DC                        |      | DC-PV2                        |
| Number of cycles of operation(With current)    |      | Ie ≤ 100A 300 ; 100A < Ie 200 |
| Number of cycles of operation(Without current) |      | 10000                         |
| Pole   |      | 2,3,4                         |
| Mounting                                       |      | Base Screws Mounting          |
| Screws for mounting(M5)                        |      | 2.0~3.0N.m                    |
| Wiring Screw(M8)                               |      | acc. IEC 60947-1 10~15N.m     |
| Ambient temperature allowed between            |      | -40°C ~ +80°C                 |
| Storage temperature allowed between            |      | -40°C ~ +85°C                 |
| Relative Humidity                              |      | 90%                           |
| Pollution degree                               |      | 3                             |
| IP rating terminals                            |      | IP20                          |
| Outside the ark handle                         |      | IP66                          |



**Wiring Graph**

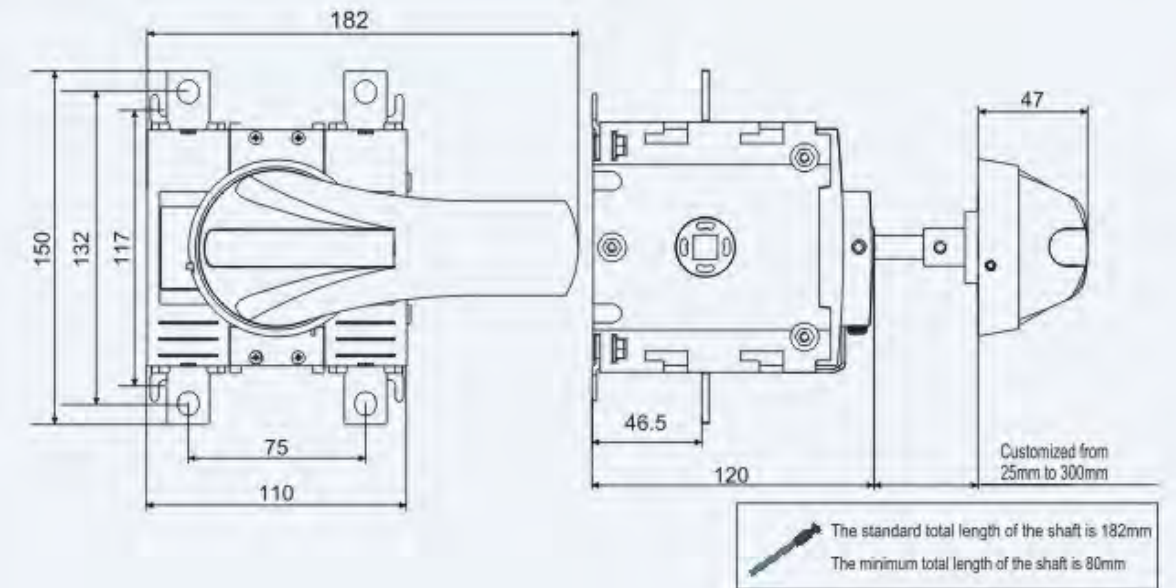
| Model     | Wiring Graph   | Ue rated operational voltage DC Volts | Rated operational current               | Poles in series | Number of Strings |
|-----------|----------------|---------------------------------------|---|-----------------|-------------------|
| BH-250-2P | <p>Example</p> | 1000V                                 | 80A \ 100A \ 125A<br>160A \ 200A \ 250A | 2               | 1                 |
| BH-250-4P | <p>Example</p> | 1000V                                 | 80A \ 100A \ 125A<br>160A \ 200A \ 250A | 2               | 2                 |
| BH-250-3P | <p>Example</p> | 1500V                                 | 80A \ 100A \ 125A<br>160A \ 200A \ 250A | 2               | 1                 |

**Product Selection**

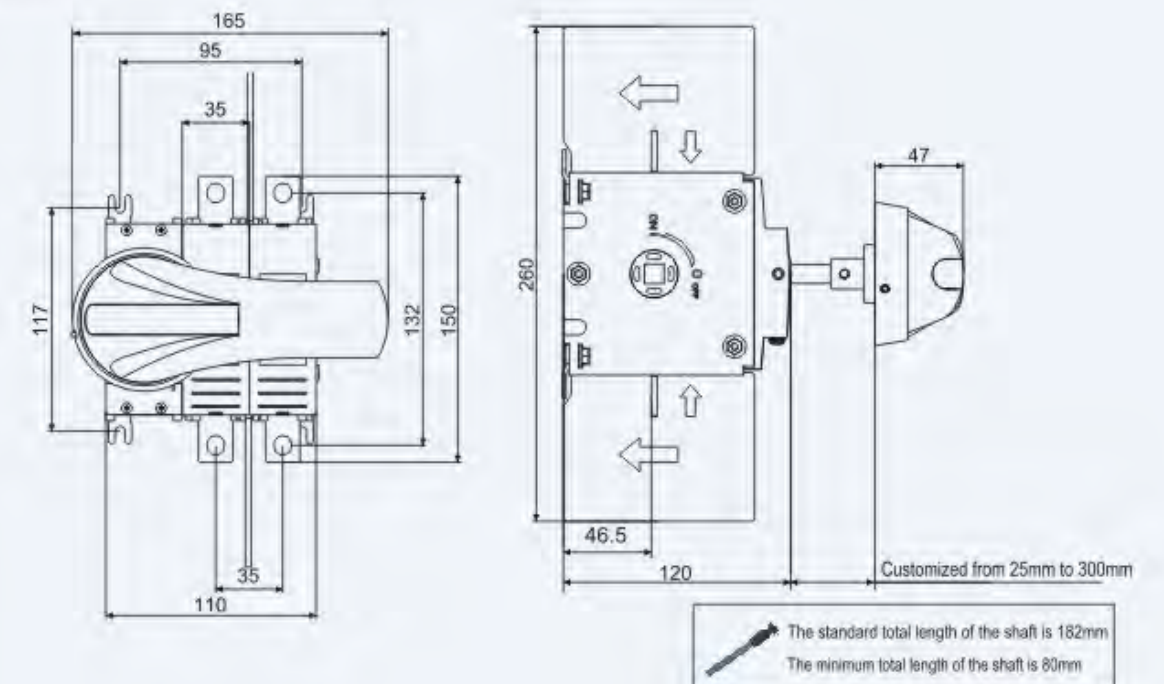
| Model     | Front Operation |   |   | The side operation |    |
|-----------|-----------------|---|---|--------------------|----|
|           | I               | A | B | A1                 | B1 |
| BH-250-2P |                 |   |   |                    |    |
| BH-250-3P |                 |   |   |                    |    |
| BH-250-4P |                 |   |   |                    |    |

**Dimensions(mm)**

BH-250-2P



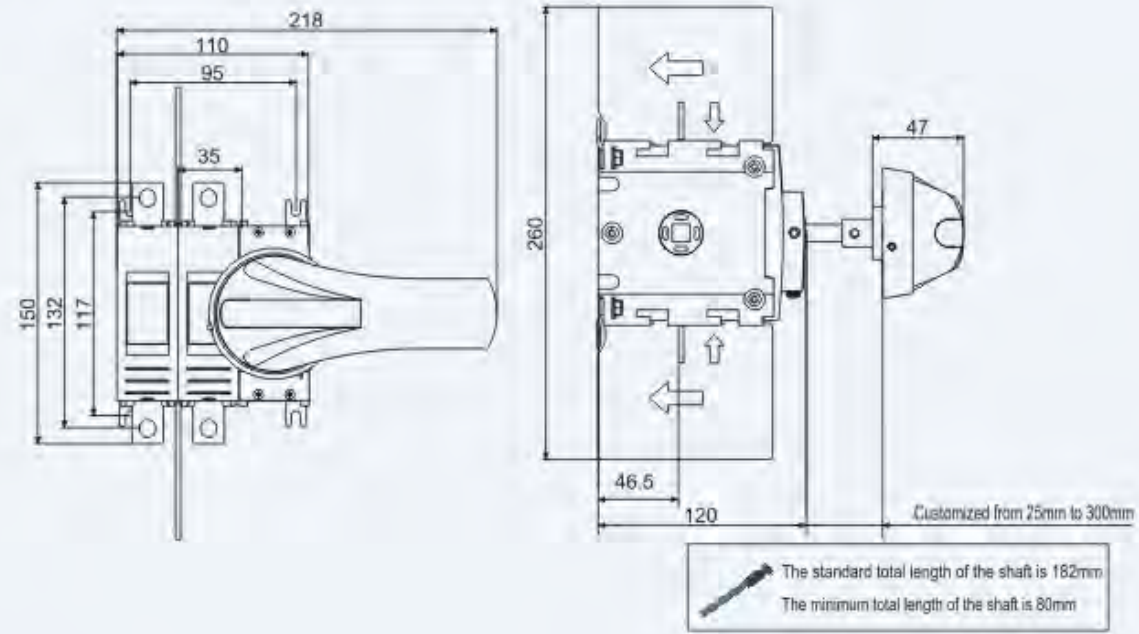
BH-250-2P-A



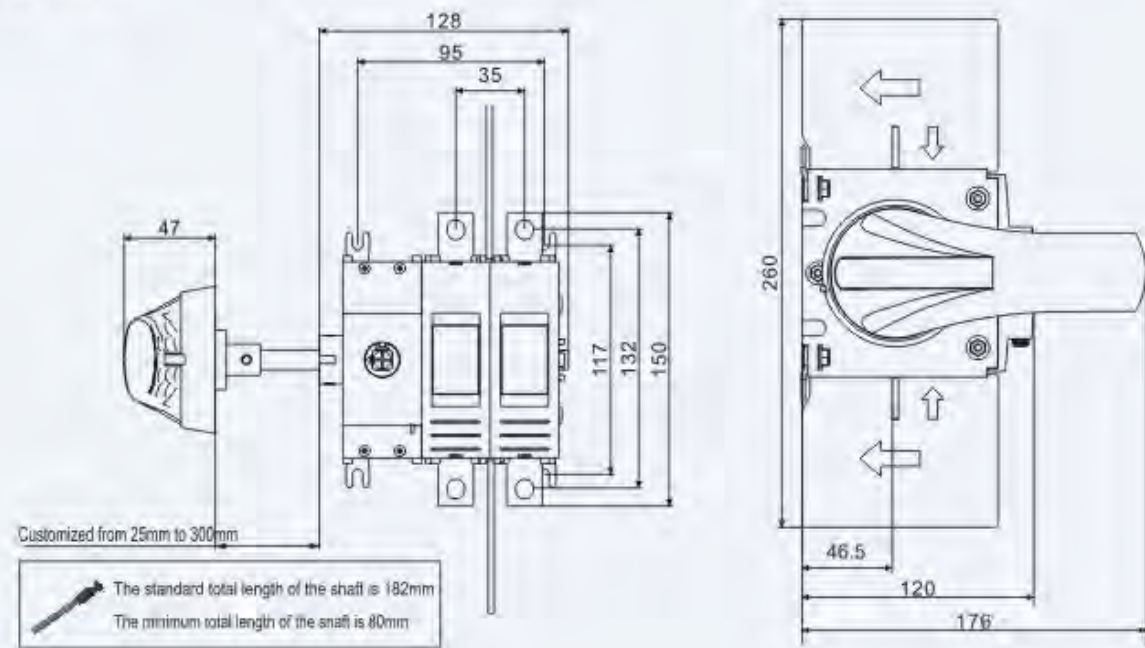


**Dimensions(mm)**

BH-250-2P-B

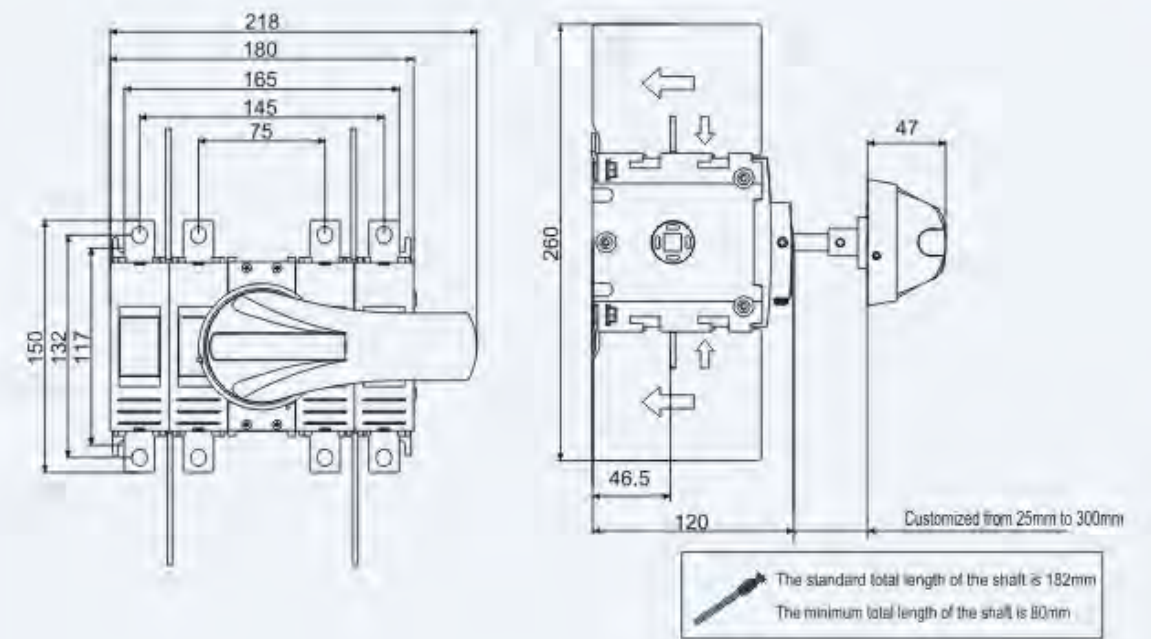


BH-250-2P-A1&B1

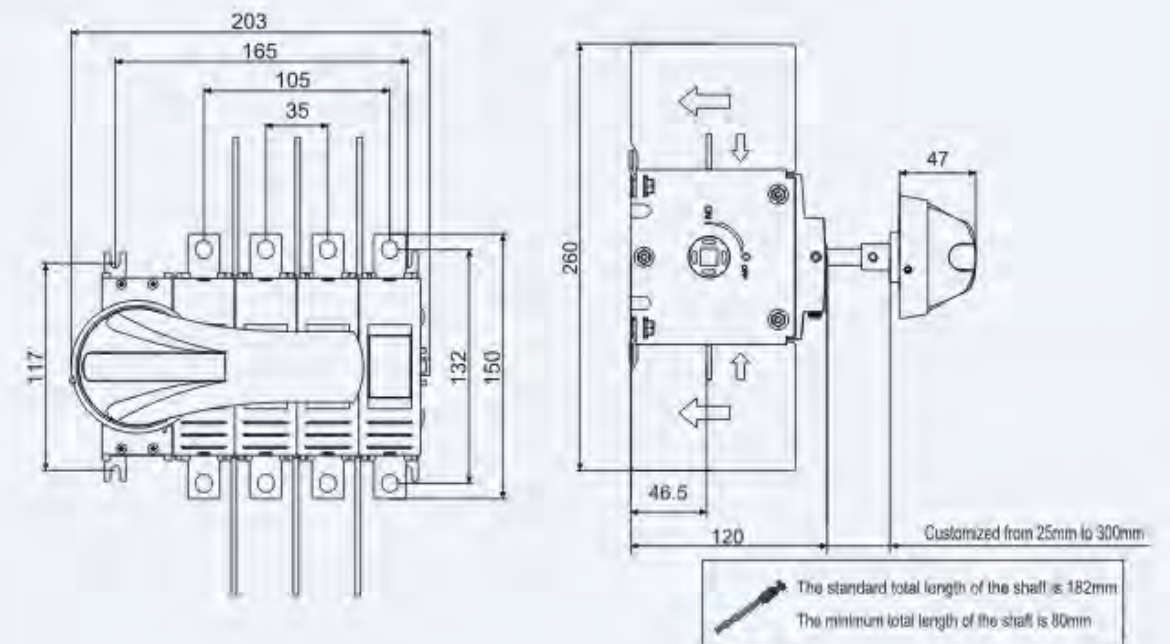


**Dimensions(mm)**

BH-250-4P



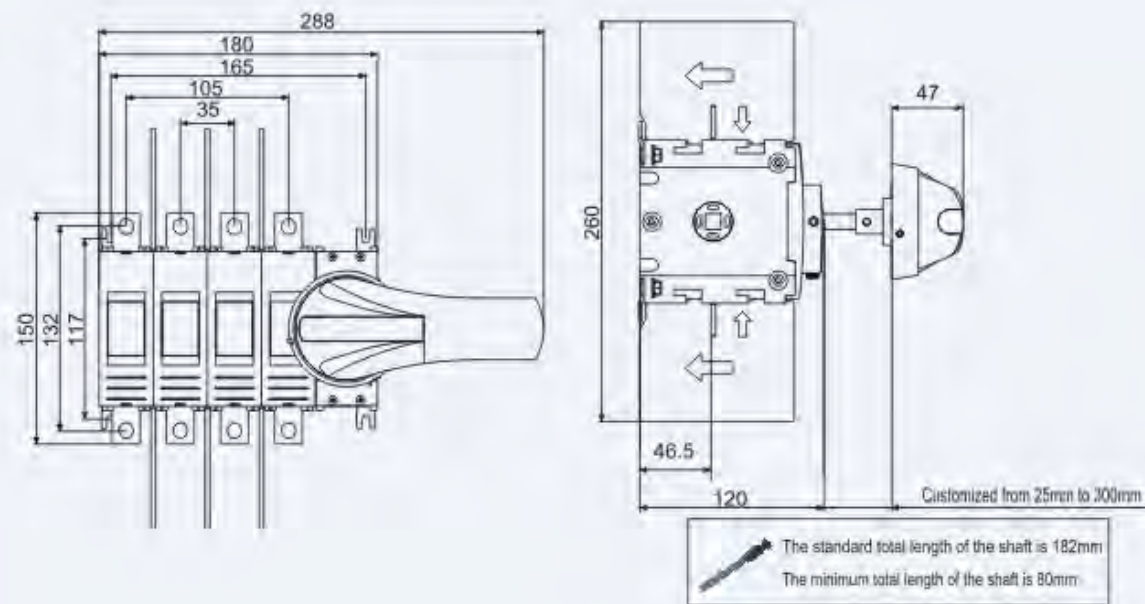
BH-250-4P-A



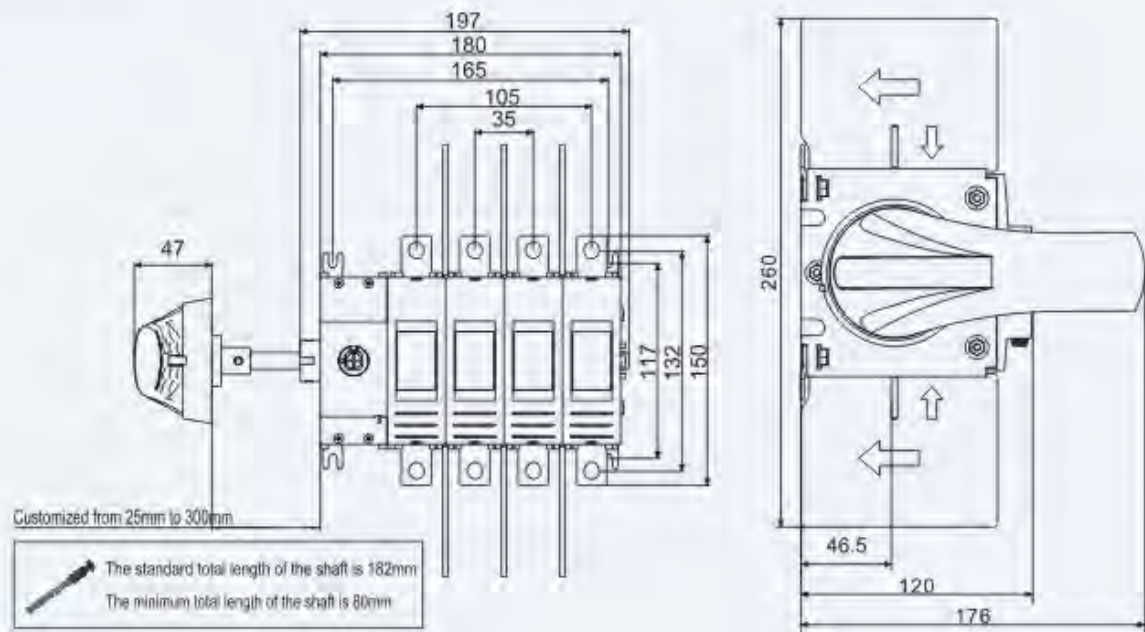


Dimensions(mm)

BH-250-4P-B

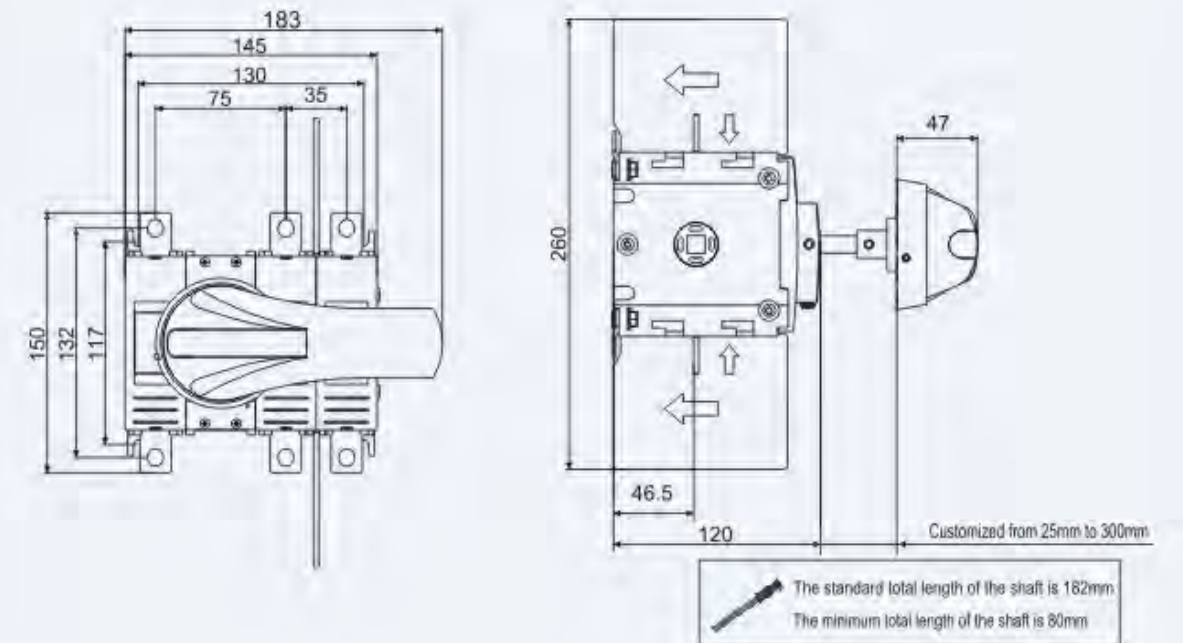


BH-250-4P-A1&B1

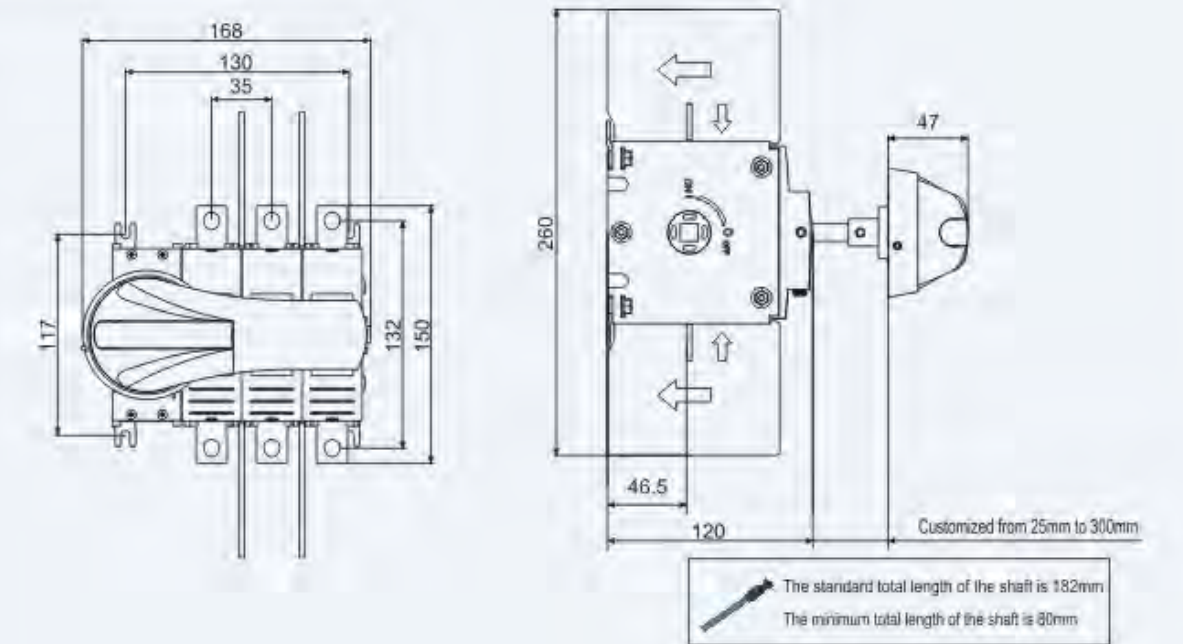


Dimensions(mm)

BH-250-3P



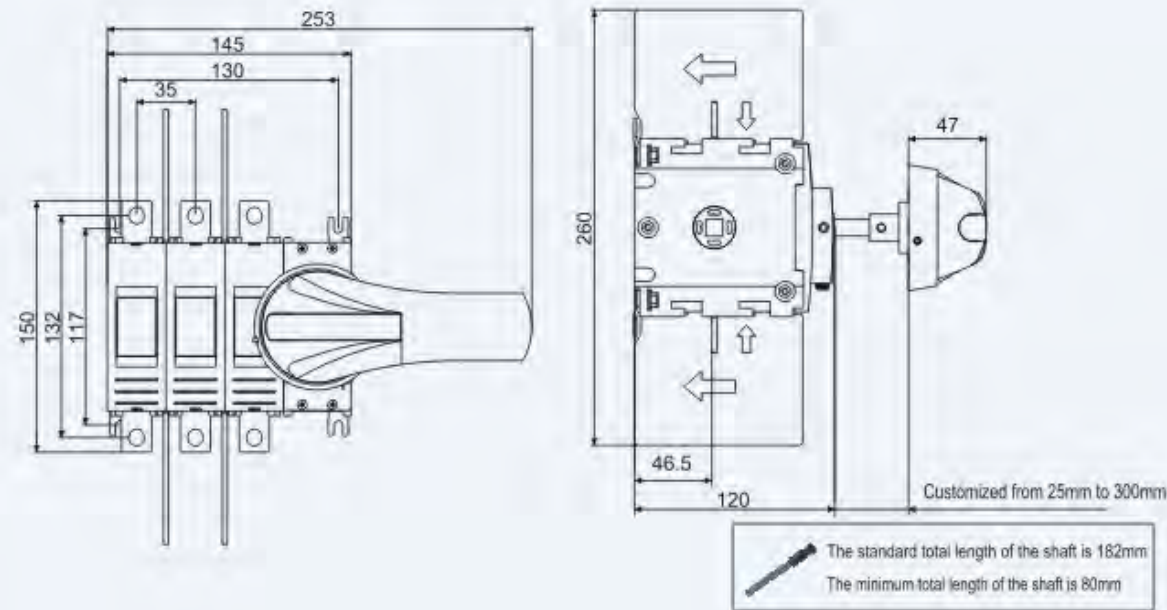
BH-250-3P-A



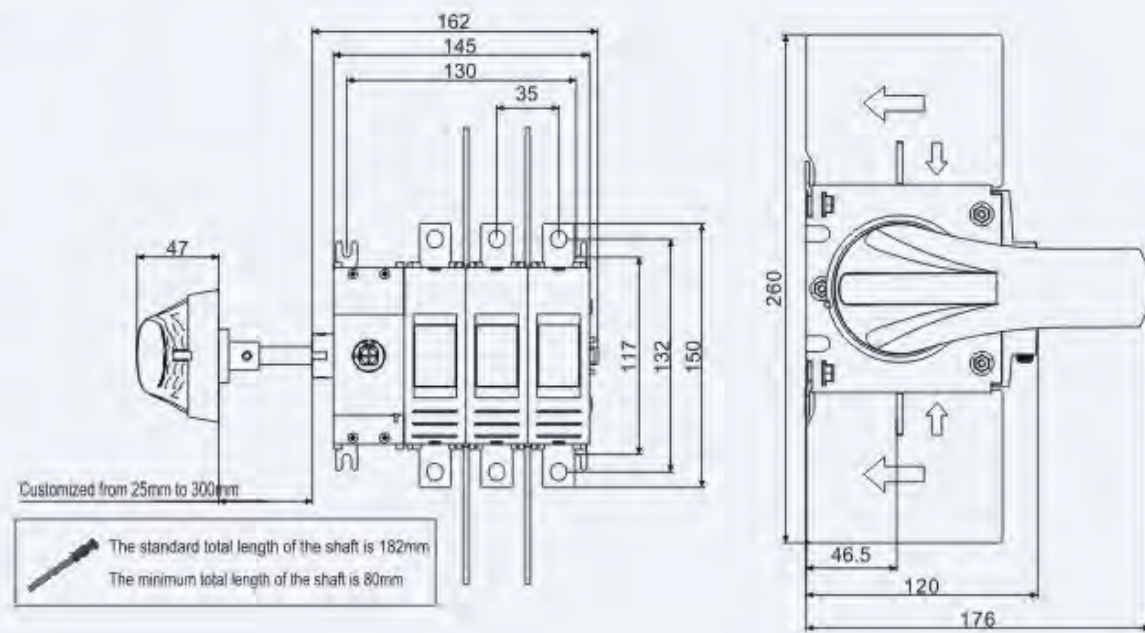


Dimensions(mm)

BH-250-3P-B

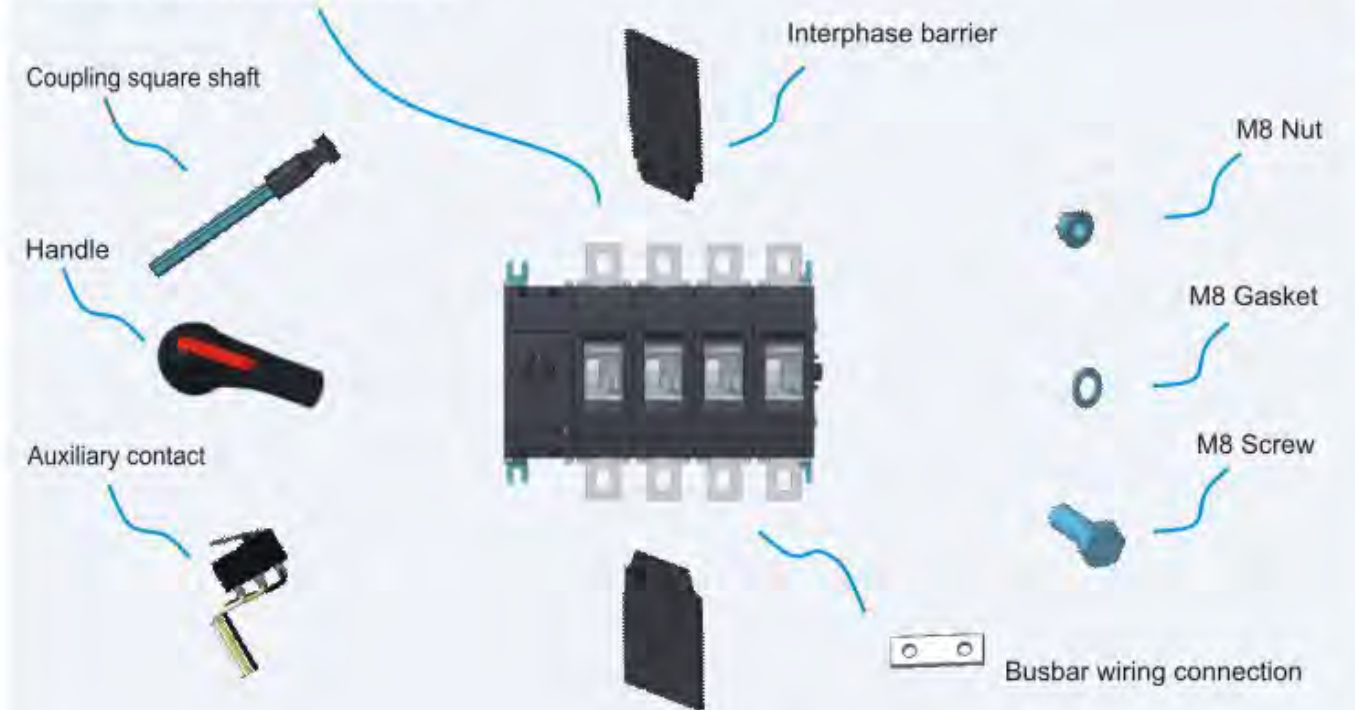


BH-250-3P-A1&B1



Switches and accessories

Front and side operable products



Accessory

| Name                   | The attachment list   |
|------------------------|---|
| standard configuration | <input checked="" type="checkbox"/> Handle<br><input checked="" type="checkbox"/> Coupling square shaft (The standard length is 182mm)<br><input checked="" type="checkbox"/> Interphase barrier<br><input checked="" type="checkbox"/> M8 Binding kits<br><input checked="" type="checkbox"/> Specification<br><input checked="" type="checkbox"/> Busbar wiring connection(DC1500V dedicated) |
| apolegamy              | <input type="checkbox"/> Auxiliary contact<br><input type="checkbox"/> Coupling square shaft Custom length____mm  |



**Derating data**

**Derating Temperature**

| Tem    |         | -40°C ~ +55°C | +60°C | +65°C  | +70°C | +75°C | +80°C |
|--------|---------|---------------|-------|--------|-------|-------|-------|
| Type   | Current |               |       |        |       |       |       |
| BH-250 |         | 250A          | 250A  | 237.5A | 230A  | 225A  | 220A  |

**Derating Altitude**

| Altitude                          | 2000m   | 3000m   | 4000m   | 5000m   |
|-----------------------------------|---------|---------|---------|---------|
| Power frequency withstand voltage | 3820VDC | 3820VDC | 3820VDC | 3820VDC |
| Isolation voltage                 | 1500VDC | 1500VDC | 1500VDC | 1500VDC |
| Working current                   | 250A    | 250A    | 237.5A  | 230A    |
| Working voltage                   | N / A   |         |         |         |

**Installation and use**

The connecting conductor shall be copper conductor or equivalent copper row. The sectional area shall be selected according to the table.

| Rated current(A)                                       | 80A               | 100A              | 125A              | 160A              | 200A              | 250A               |
|--|-------------------|-------------------|-------------------|-------------------|-------------------|--------------------|
| The area of a wire or copper conductor mm <sup>2</sup> | 25mm <sup>2</sup> | 35mm <sup>2</sup> | 50mm <sup>2</sup> | 70mm <sup>2</sup> | 95mm <sup>2</sup> | 120mm <sup>2</sup> |

**BH-250 Series  
PV DC Isolation Switch**



**UL98B**

- 1 Brand
- 2 Model
- 3 On Off
- 4 Rated Current
- 5 Nominal Insulation Voltage
- 6 Rated Withstand Voltage
- 7 Utilization Category
- 8 Auxiliary Contact
- 9 Lockable Handle
- 10 Rated Voltage
- 11 Certificate Mark
- 12 Electrical Symbol

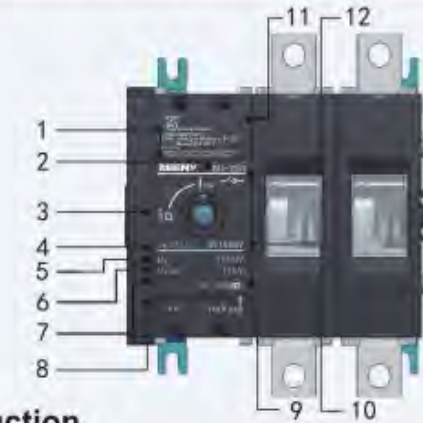


**Application**

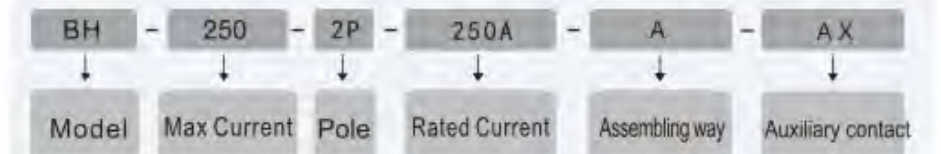
ZBENY BH-250 DC disconnect switch is designed and developed for solar PV inverter, combiner box or any DC equipments build-in according to UL98B .The DC load break switches provide safety isolation for one DC circuit up to 1500VDC 250 A.

High capacity 10KA for 50ms test and patented DC arc extinguishing chamber ensure fast disconnection and reliable operation for longer working life.

**Appearance Introduction**



**Type Instruction**



|                        |      |    |      |   |   |
|------------------------|------|----|------|---|---|
| PV DC Isolation Switch | 250A | 2P | 250A | <input type="checkbox"/> Blank<br><input type="checkbox"/> A <input type="checkbox"/> B | <input type="checkbox"/> without<br><input type="checkbox"/> with |
|------------------------|------|----|------|---|---|

**Parameter**

| Electrical Characteristics                     |      |                          |
|--|------|--------------------------|
| Rated Working Voltage                          | Ue   | 1500V                    |
| Rated Current                                  | Ie   | 250A                     |
| Rated impulse withstand voltage                | Uimp | 12kV                     |
| Rated short-time withstand current             | Icw  | 10kA/50ms                |
| Rated short-circuit making capacity            | Icm  | 10kA/50ms                |
| Rated conditional short-circuit current(kA)    |      | 10kA                     |
| Installation Environment                       |      |                          |
| Number of cycles of operation(With current)    |      | 400                      |
| Number of cycles of operation(Without current) |      | 400                      |
| Pole   |      | 2                        |
| Mounting                                       |      | Base Screws Mounting     |
| Screws for mounting(M5)                        |      | 2.0~3.0N.m               |
| Wiring Screw(M8)                               |      | acc.IEC 60947-1 10~15N.m |
| Ambient temperature allowed between            |      | -40°C ~ +80°C            |
| Storage temperature allowed between            |      | -40°C ~ +85°C            |
| Relative Humidity                              |      | 90%                      |
| Pollution degree                               |      | 3                        |
| IP rating terminals                            |      | IP20                     |
| Outside the ark handle                         |      | IP65                     |



**Wiring Graph**

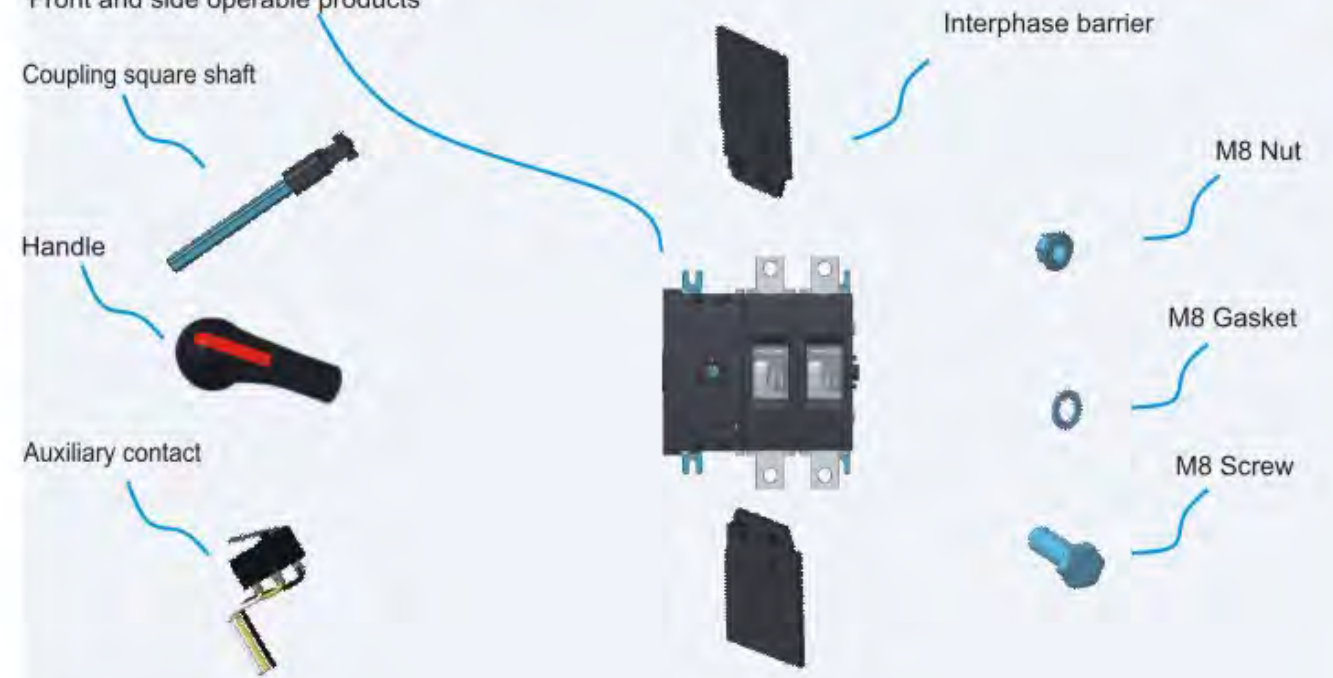
| Model     | Wiring Graph  | Ue rated operational voltage DC Volts | Rated operational current | Poles in series | Number of Strings |
|-----------|---|---------------------------------------|---------------------------|-----------------|-------------------|
| BH-250-2P |  | 1500V                                 | 250A                      | 1               | 1                 |

**Product types choosing**

| BH-250-2P   | BH-250-2P-A   | BH-250-2P-B  |
|---|---|--|
| Front operating handle  | Front operating handle  | Side handle  |
|  |  |  |

**Switches and accessories**

BH-250-2P  
Front and side operable products



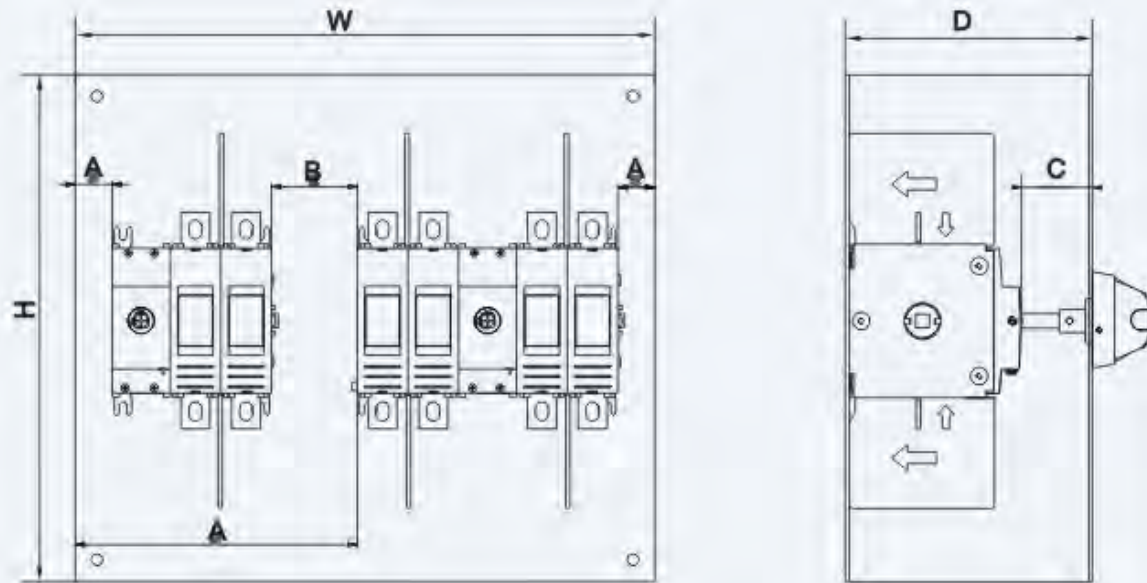
**Accessory**

| Name                   | The attachment list  |
|------------------------|--|
| standard configuration | <input checked="" type="checkbox"/> Handle   |
|                        | <input checked="" type="checkbox"/> Coupling square shaft (The standard length is 182mm) |
|                        | <input checked="" type="checkbox"/> Interphase barrier                                   |
|                        | <input checked="" type="checkbox"/> M8 Binding kits                                      |
| apolegamy              | <input checked="" type="checkbox"/> Specification  |
|                        | <input type="checkbox"/> Auxiliary contact   |
|                        | <input type="checkbox"/> Coupling square shaft Custom length_____mm                      |



**Dimensions(mm)**

Minimum enclosure dimensions UL98  
 Dimensions minimum des coffrets UL98B  
 Dimensiones minimas de las cajas UL98B

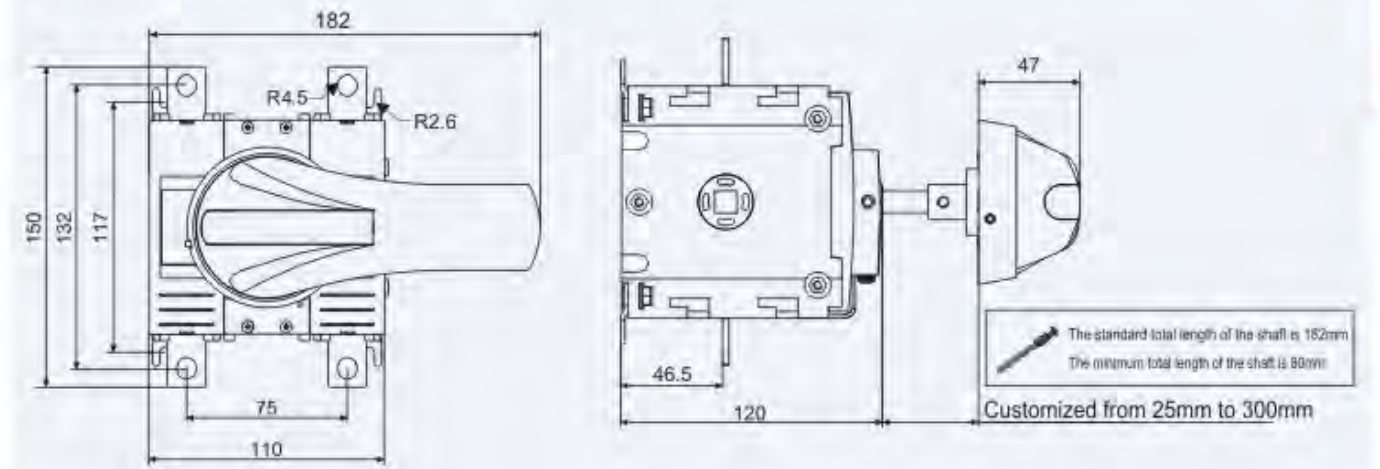


| Minimum enclosure size | Size                  |
|------------------------|-----------------------|
| H x W x D              | 400mm x 350mm x 180mm |

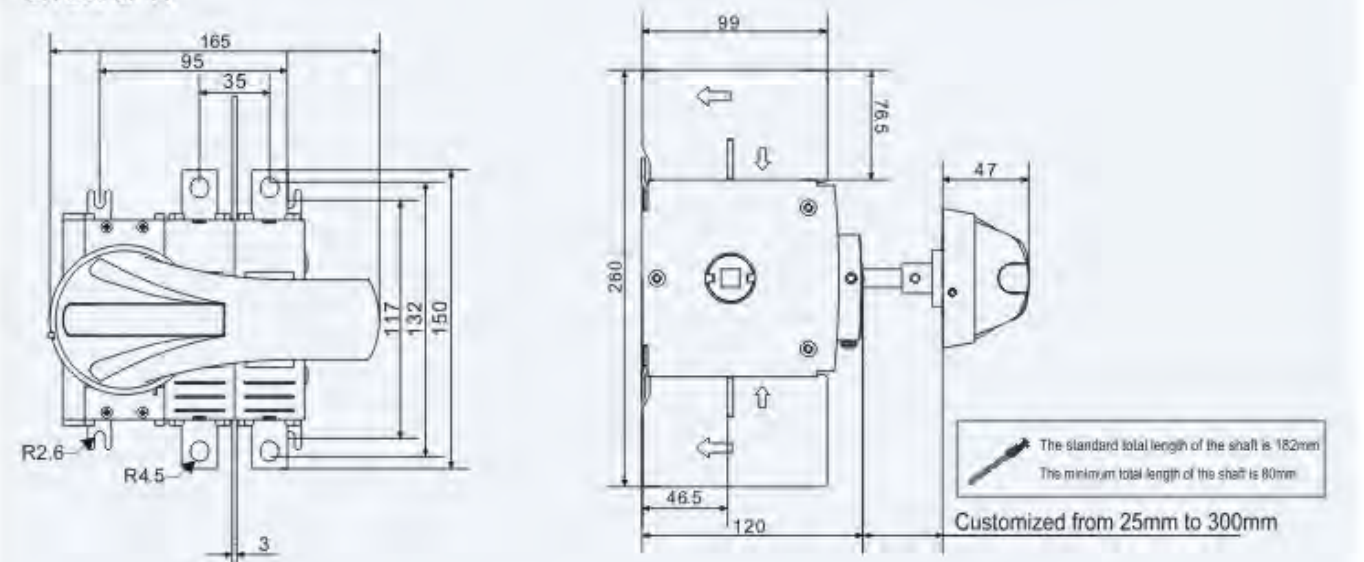
| Clearance | Size   |
|-----------|--------|
| A min.    | 25.4mm |
| B min.    | 50.8mm |
| C min.    | 22mm   |

**Dimensions(mm)**

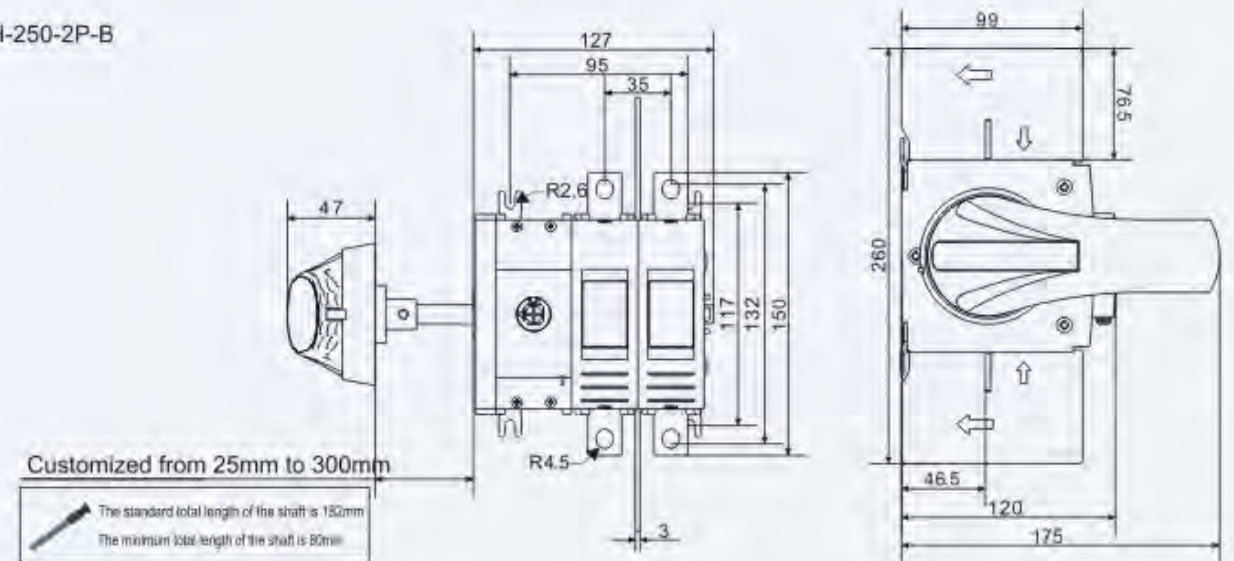
BH-250-2P



BH-250-2P-A



BH-250-2P-B





**Derating data**

**Derating Temperature**

| Tem    |         | -40°C ~ +55°C | +60°C | +65°C  | +70°C | +75°C | +80°C |
|--------|---------|---------------|-------|--------|-------|-------|-------|
| Type   | Current |               |       |        |       |       |       |
| BH-250 |         | 250A          | 245A  | 237.5A | 230A  | 225A  | 220A  |

**Derating Altitude**

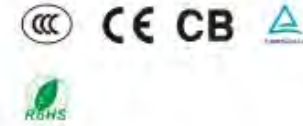
| Altitude                          | 2000m   | 3000m   | 4000m   | 5000m   |
|-----------------------------------|---------|---------|---------|---------|
| Power frequency withstand voltage | 3820VDC | 3820VDC | 3820VDC | 3820VDC |
| Isolation voltage                 | 1500VDC | 1500VDC | 1500VDC | 1500VDC |
| Working current                   | 250A    | 250A    | 237.5A  | 230A    |
| Working voltage                   | N / A   |         |         |         |

**Installation and use**

|  |                    |
|--|--------------------|
| Rated current(A)                           | 250A               |
| Section area of copper row mm <sup>2</sup> | 120mm <sup>2</sup> |

WARNING Verify that all connections(including bridging link connections) are suitable for the rated current, prepared to ensure only conductive parts are clamped and tightened to the manufacturers required torque before energization.

**BH-400 Series  
PV DC Isolation Switch**



IEC/EN 60947-3  
GB/T 14048.3

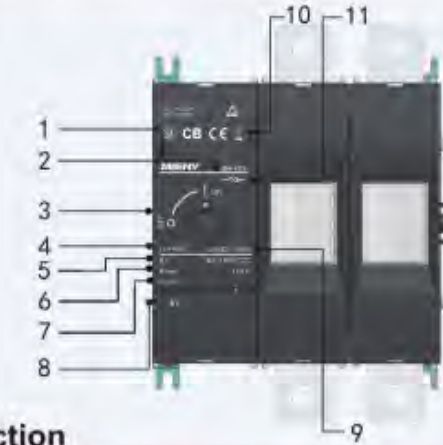
- 1 Brand
- 2 Model
- 3 On Off
- 4 Rated Current
- 5 Nominal Insulation Voltage
- 6 Rated Withstand Voltage
- 7 Utilization Category
- 8 Auxiliary Contact
- 9 Rated Voltage
- 10 Certificate Mark
- 11 Electrical Symbol



**Application**

ZBENY BH-400 DC disconnect switch is designed and developed for solar PV inverter, combiner box or any DC equipments build-in according to IEC60947-3. The DC load break switches provide safety isolation for one DC circuit up to 1500VDC 400A. High capacity 10KA for 50ms test and patented DC arc extinguishing chamber ensure fast disconnection and reliable operation for longer working life.

**Appearance Introduction**



**Type Instruction**


|                        |   |             |   |      |   |  |   |  |   |   |
|------------------------|---|-------------|---|------|---|--|---|--|---|---|
| BH                     | - | 400         | - | 2P   | - | 400A   | - | A  | - | AX  |
| ↓                      |   | ↓           |   | ↓    |   | ↓  |   | ↓  |   | ↓   |
| Model                  |   | Max Current |   | Pole |   | Rated Current  |   | Assembling way   |   | Auxiliary contact   |
| PV DC Isolation Switch |   | 400A        |   | 2P   |   | <input type="checkbox"/> 320A<br><input type="checkbox"/> 400A |   | <input type="checkbox"/> Blank<br><input type="checkbox"/> A <input type="checkbox"/> B<br><input type="checkbox"/> A1 |   | <input type="checkbox"/> without<br><input type="checkbox"/> with |

**Parameter**

| Electrical Characteristics                     |      |                              |
|--|------|------------------------------|
| Rated Working Voltage                          | Ue   | 1000V / 1500V                |
| Rated Current                                  | Ie   | 320A/400A                    |
| Rated impulse withstand voltage                | Uimp | 12kV                         |
| Rated short-time withstand current (1s)        | Icw  | 10kA                         |
| Rated short-circuit making capacity            | Icm  | 10kA                         |
| Rated conditional short-circuit current(kA)    |      | 10kA                         |
| Installation Environment                       |      |                              |
| Utilization category DC                        |      | DC-PV1                       |
| Number of cycles of operation(With current)    |      | 200                          |
| Number of cycles of operation(Without current) |      | 5000                         |
| Pole   |      | 2                            |
| Mounting                                       |      | Base Screws Mounting         |
| Screws for mounting(M5)                        |      | 2.0N·m~3.0N·m                |
| Wiring Screw(M10)                              |      | acc. IEC 60947-1 15N·m~20N·m |
| Ambient temperature allowed between            |      | -40°C ~ +85°C                |
| Storage temperature allowed between            |      | -40°C ~ +85°C                |
| Relative Humidity                              |      | 90%                          |
| Pollution degree                               |      | 3                            |
| IP rating terminals                            |      | IP20                         |
| Outside the ark handle                         |      | IP66                         |



**Wiring Graph**

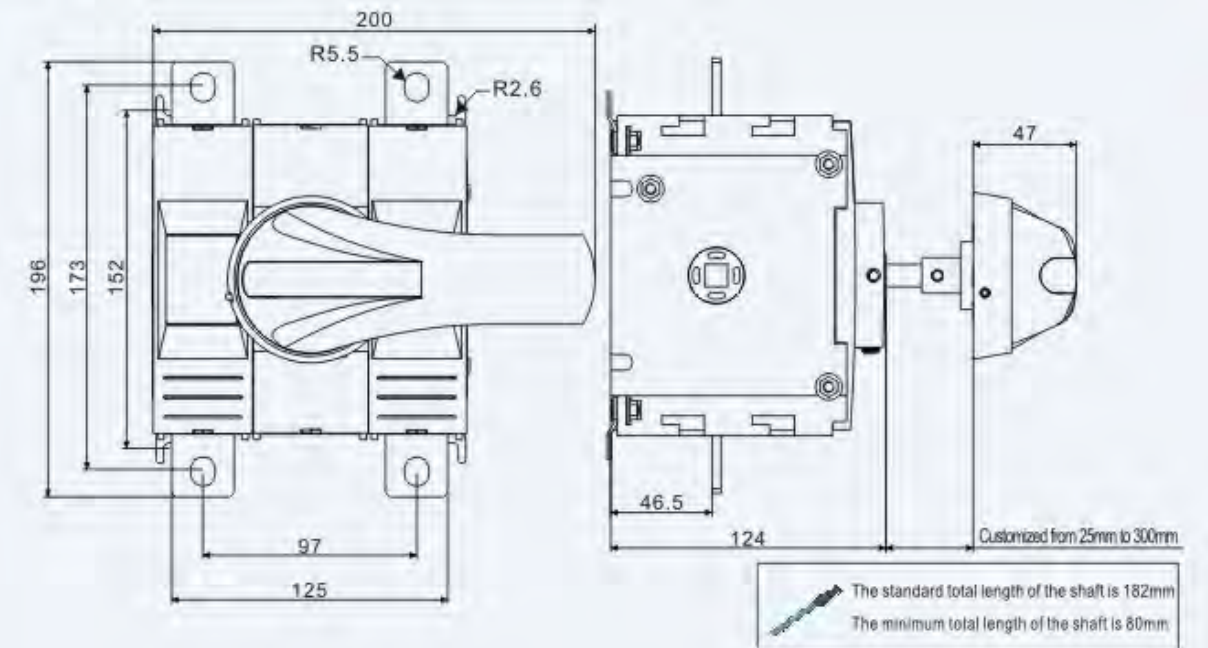
| Model  | Wiring Graph  | Ue rated operational voltage DC Volts | Rated operational current | Poles in series | Number of Strings |
|--|---|---------------------------------------|---------------------------|-----------------|-------------------|
| BH-400-2P<br> |  | 1000V/1500V                           | 320A/400A                 | 2               | 1                 |
|  | Example   |                                       |                           |                 |                   |
|  |  |                                       |                           |                 |                   |

**Product Selection**

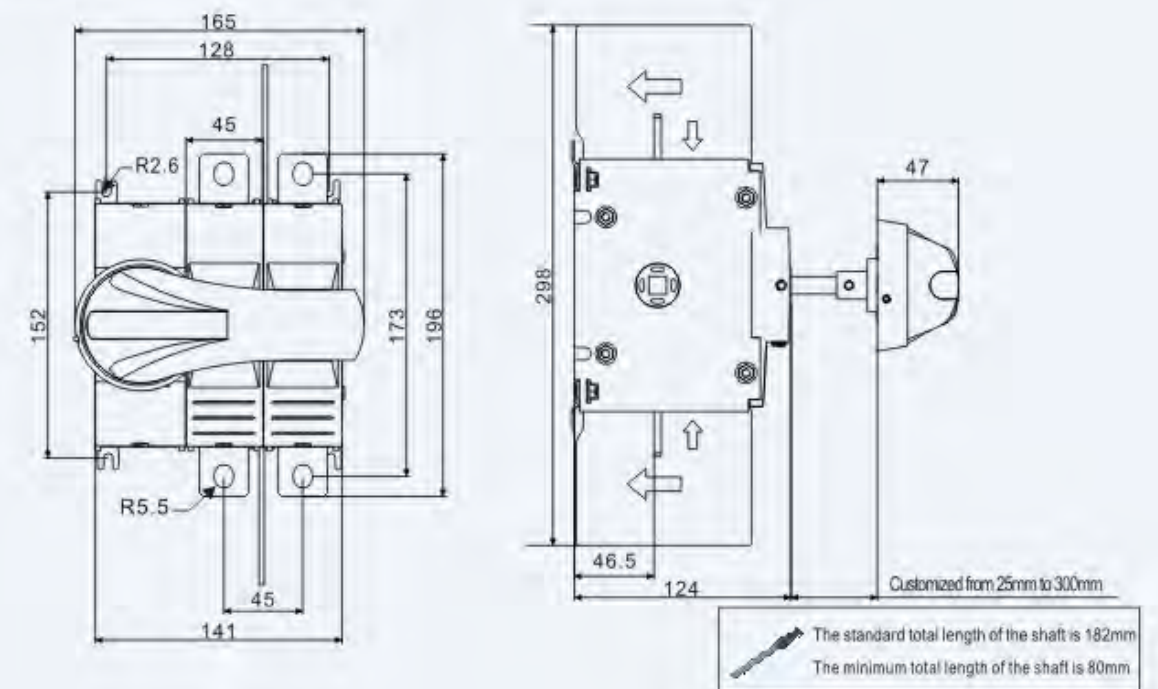
| Model     | Front Operation   |   |   | The side operation   |
|-----------|---|---|---|--|
|           | BH-400-2P   | BH-400-2P-A   | BH-400-2P-B   | BH-400-2P-A1   |
| BH-400-2P |  |  |  |  |

**Dimensions(mm)**

BH-400-2P



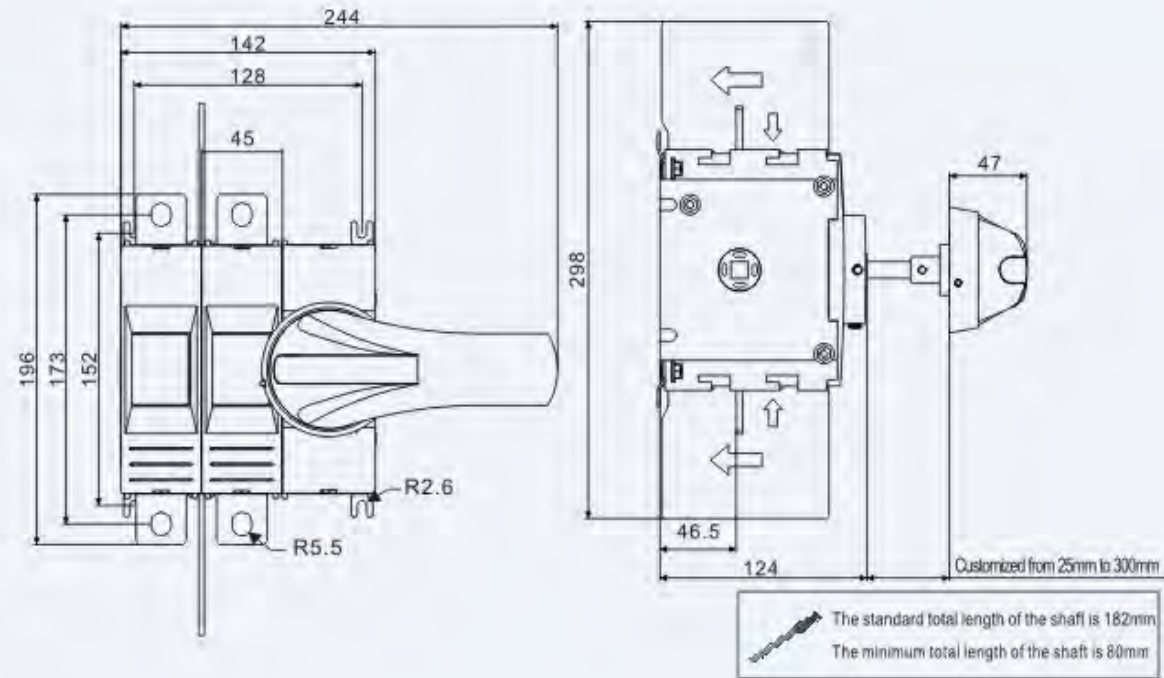
BH-400-2P-A



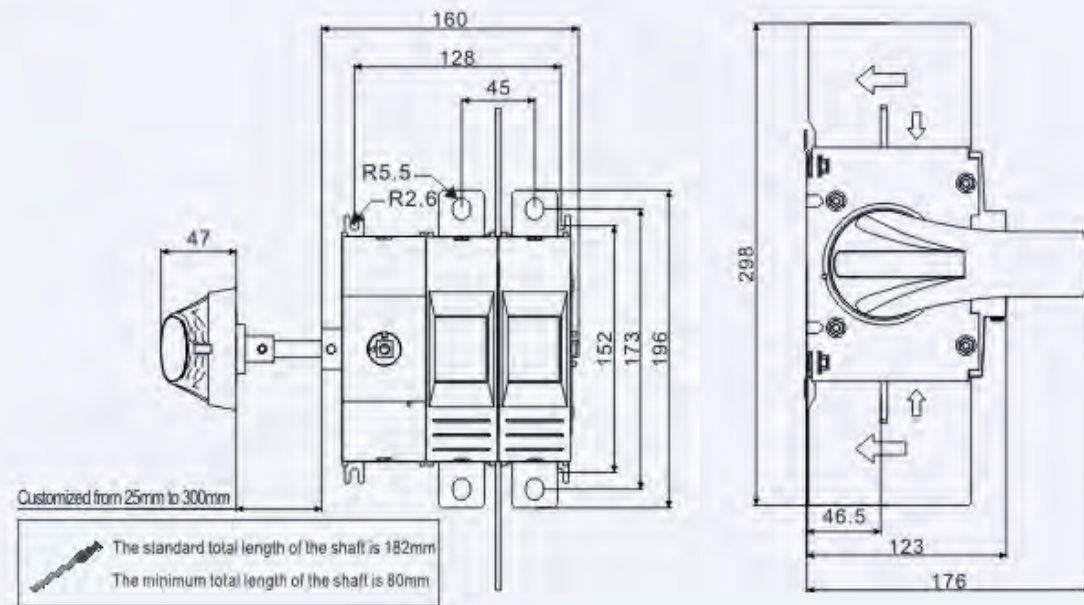


Dimensions(mm)

BH-400-2P-B

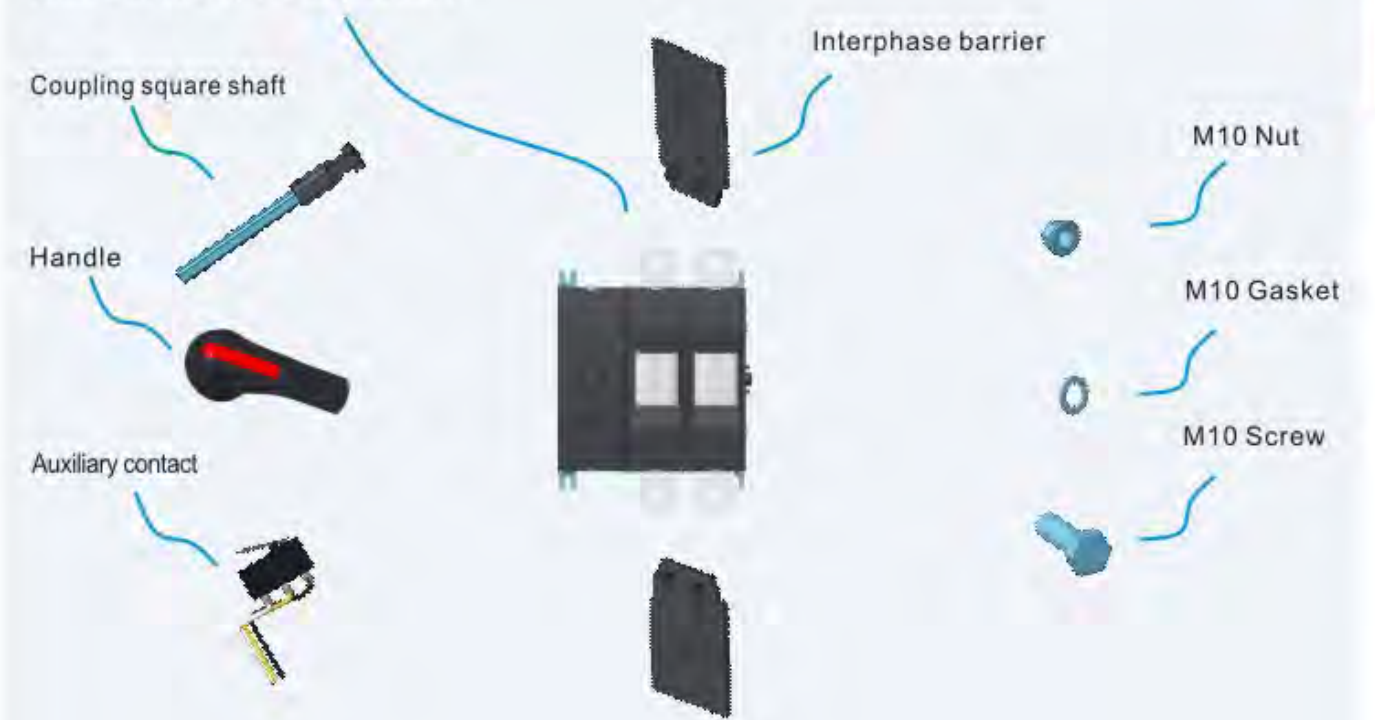


BH-400-2P-A1



Switches and accessories

Front and side operable products



Accessory

| Name                   | The attachment list  |
|------------------------|--|
| standard configuration | <input checked="" type="checkbox"/> Handle   |
|                        | <input checked="" type="checkbox"/> Coupling square shaft (The standard length is 182mm) |
|                        | <input checked="" type="checkbox"/> Interphase barrier                                   |
|                        | <input checked="" type="checkbox"/> M10 Binding kits                                     |
| apolegamy              | <input checked="" type="checkbox"/> Specification  |
|                        | <input type="checkbox"/> Auxiliary contact   |
|                        | <input type="checkbox"/> Coupling square shaft Custom length ____mm                      |



**Derating data**

**Derating Temperature**

| Tem    |         | -40°C ~ +60°C | +65°C | +70°C | +75°C | +80°C | +85°C |
|--------|---------|---------------|-------|-------|-------|-------|-------|
| Type   | Current |               |       |       |       |       |       |
| BH-250 |         | 400A          | 395A  | 390A  | 385A  | 380A  | 375A  |

**Derating Altitude**

| Altitude                          | 2000m   | 3000m   | 4000m   | 5000m   |
|-----------------------------------|---------|---------|---------|---------|
| Power frequency withstand voltage | 3820VDC | 3820VDC | 3820VDC | 3820VDC |
| Isolation voltage                 | 1500VDC | 1500VDC | 1500VDC | 1500VDC |
| Working current                   | 400A    | 400A    | 380A    | 370A    |
| Working voltage                   | N / A   |         |         |         |

**Installation and use**

The connecting conductor shall be copper conductor or equivalent copper row. The sectional area shall be selected according to the table.

| Rated current(A)                                       | 320A               | 400A               |
|--|--------------------|--------------------|
| The area of a wire or copper conductor mm <sup>2</sup> | 185mm <sup>2</sup> | 240mm <sup>2</sup> |

**BH-400 Series  
PV DC Isolation Switch**



AS 60947.3  
IEC/EN 60947-3  
GB/T 14048.3

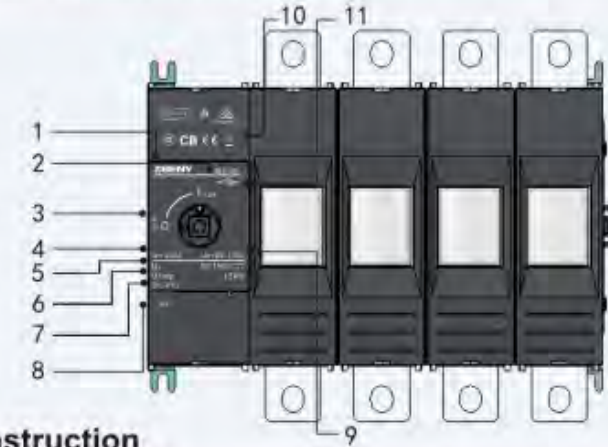
- 1 Brand
- 2 Model
- 3 On Off
- 4 Rated Current
- 5 Nominal Insulation Voltage
- 6 Rated Withstand Voltage
- 7 Utilization Category
- 8 Auxiliary Contact
- 9 Rated Voltage
- 10 Certificate Mark
- 11 Electrical Symbol

**Application**

**ZBENY** BH-400 DC disconnect switch is designed and developed for solar PV inverter, combiner box or any DC equipments build-in according to IEC60947-3. The DC load break switches provide safety isolation for one DC circuit up to 1500VDC 400A.

High capacity 10KA for 50ms test and patented DC arc extinguishing chamber ensure fast disconnection and reliable operation for longer working life.

**Appearance Introduction**



**Type Instruction**

|                        |   |             |   |      |   |  |   |  |   |   |
|------------------------|---|-------------|---|------|---|--|---|--|---|---|
| BH                     | - | 400         | - | 4P   | - | 400A   | - | A  | - | AX  |
| Model                  |   | Max Current |   | Pole |   | Rated Current  |   | Assembling way   |   | Auxiliary contact   |
| PV DC Isolation Switch |   | 400A        |   | 4P   |   | <input type="checkbox"/> 320A<br><input type="checkbox"/> 400A |   | <input type="checkbox"/> Blank<br><input type="checkbox"/> A <input type="checkbox"/> B<br><input type="checkbox"/> A1 |   | <input type="checkbox"/> without<br><input type="checkbox"/> with |

**Parameter**

| Electrical Characteristics                     |      |                              |
|--|------|------------------------------|
| Rated Working Voltage                          | Ue   | 1000V/1500V                  |
| Rated Current                                  | Ie   | 320A/400A                    |
| Rated impulse withstand voltage                | Uimp | 12kV                         |
| Rated short-time withstand current (1s)        | Icw  | 10kA                         |
| Rated short-circuit making capacity            | Icm  | 10kA                         |
| Rated conditional short-circuit current(kA)    |      | 10kA                         |
| Installation Environment                       |      |                              |
| Utilization category DC                        |      | DC-PV2                       |
| Number of cycles of operation(With current)    |      | 200                          |
| Number of cycles of operation(Without current) |      | 5000                         |
| Pole   |      | 4                            |
| Mounting                                       |      | Base Screws Mounting         |
| Screws for mounting(M5)                        |      | 2.0N·m~3.0N·m                |
| Wiring Screw(M10)                              |      | acc. IEC 60947-1 15N·m~20N·m |
| Ambient temperature allowed between            |      | -40°C ~ +80°C                |
| Storage temperature allowed between            |      | -40°C ~ +85°C                |
| Relative Humidity                              |      | 90%                          |
| Pollution degree                               |      | 3                            |
| IP rating terminals                            |      | IP20                         |
| Outside the ark handle                         |      | IP66                         |



**Wiring Graph**

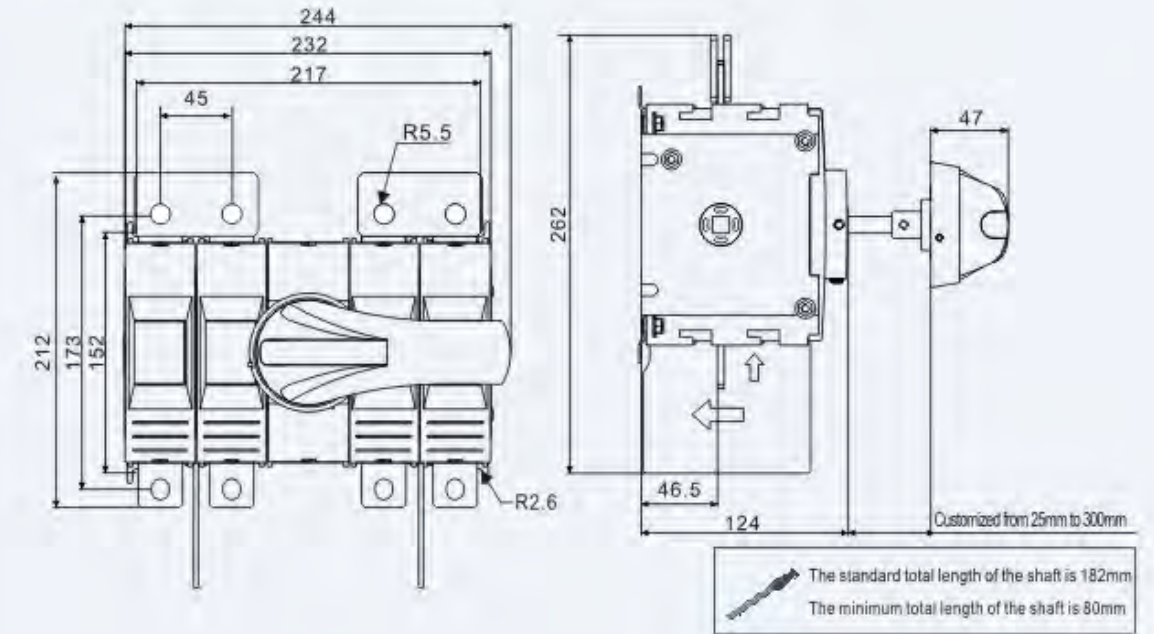
| Model     | Wiring Graph  | Ue rated operational voltage DC Volts | Rated operational current | Poles in series | Number of Strings |
|-----------|---|---------------------------------------|---------------------------|-----------------|-------------------|
| BH-400-4P | <br>Example<br> | 1000V/1500V                           | 320A/400A                 | 2               | 1                 |

**Product Selection**

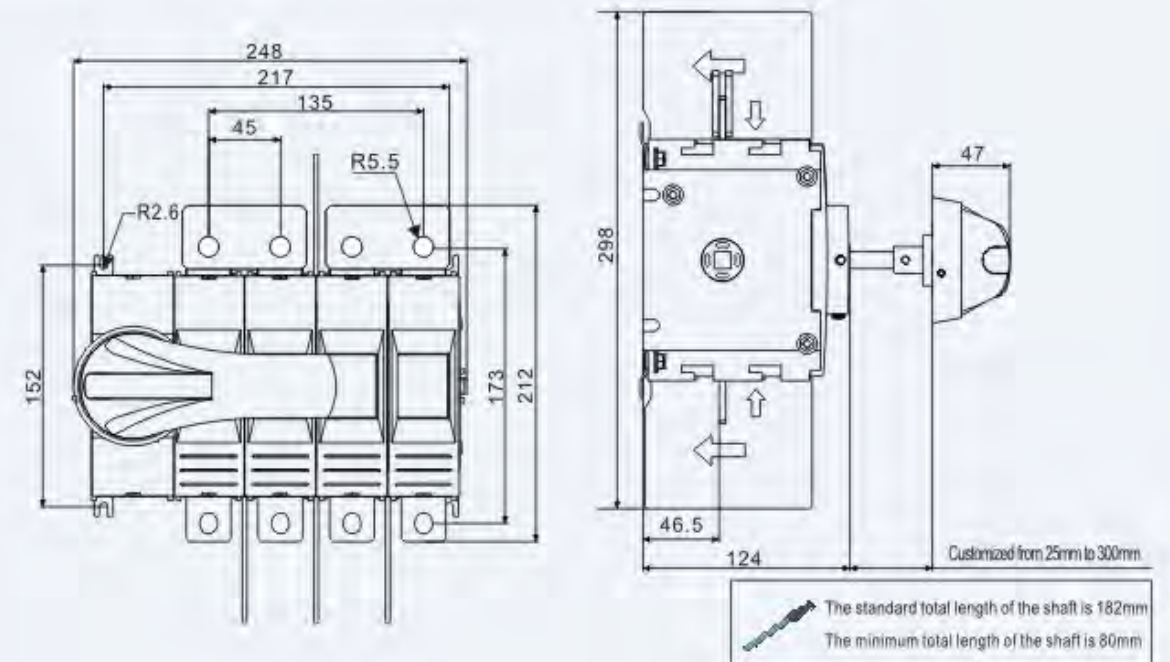
| Model     | Front Operation   |   | The side operation   |   |
|-----------|---|---|--|---|
|           | BH-400-4P   | BH-400-4P-A   | BH-400-4P-B  | BH-400-4P-A1  |
| BH-400-4P |  |  |  |  |

**Dimensions(mm)**

BH-400-4P



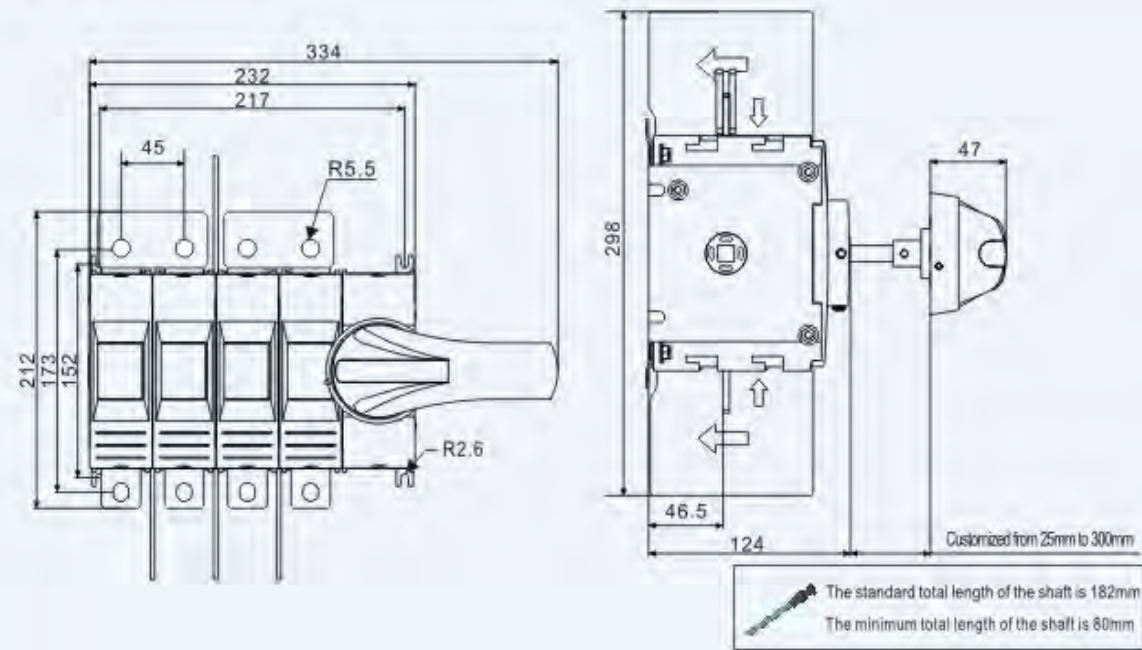
BH-400-4P-A



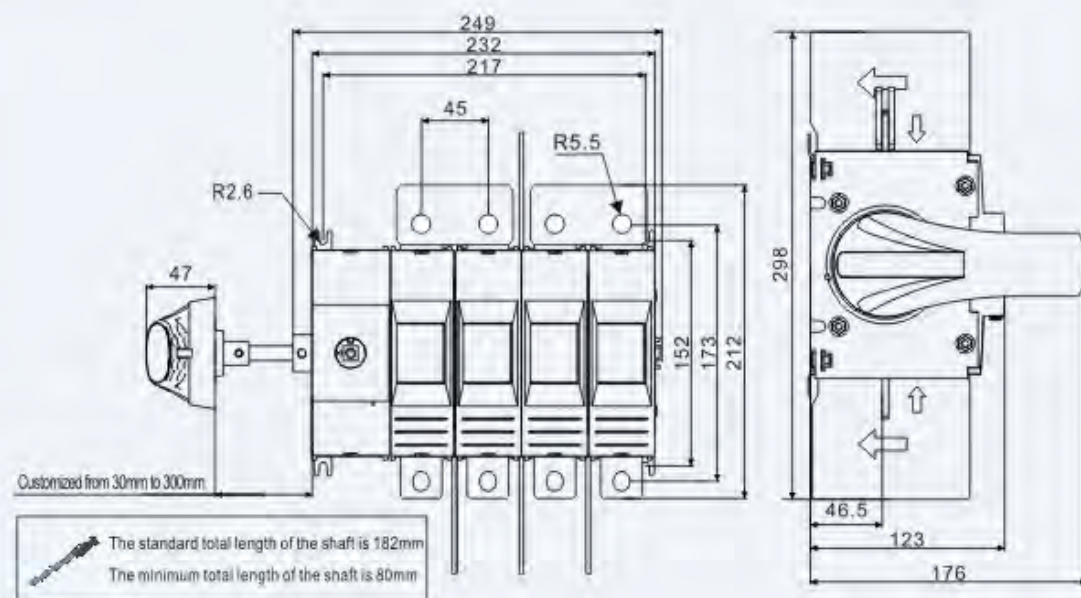


**Dimensions(mm)**

BH-400-4P-B

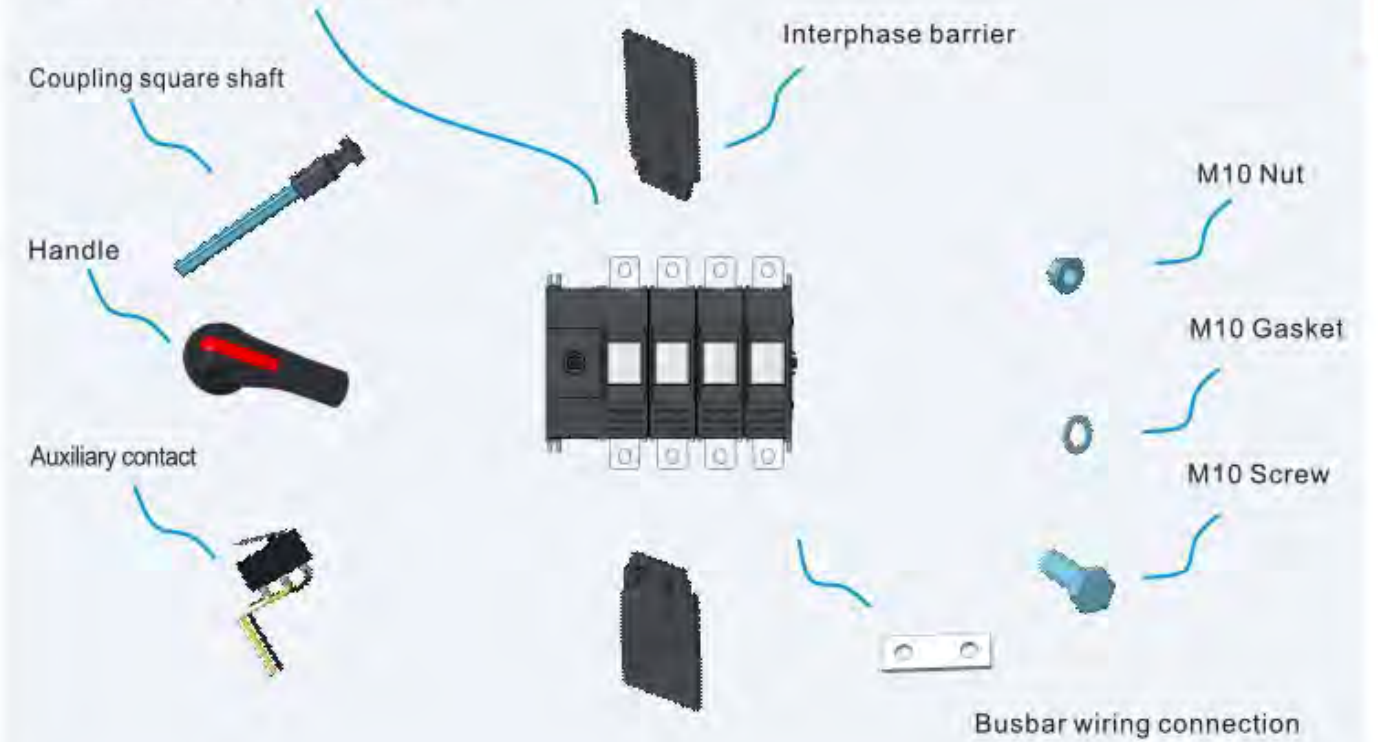


BH-400-4P-A1



**Switches and accessories**

Front and side operable products





**Accessory**

| Name                   | The attachment list  |
|------------------------|--|
| standard configuration | <input checked="" type="checkbox"/> Handle   |
|                        | <input checked="" type="checkbox"/> Coupling square shaft (The standard length is 182mm) |
|                        | <input checked="" type="checkbox"/> Interphase barrier                                   |
|                        | <input checked="" type="checkbox"/> M10 Binding kits                                     |
|                        | <input checked="" type="checkbox"/> Specification  |
| apolegamy              | <input checked="" type="checkbox"/> Busbar wiring connection                             |
|                        | <input type="checkbox"/> Auxiliary contact   |
|                        | <input type="checkbox"/> Coupling square shaft Custom length____mm                       |



**Terminals / connection**

|  |  |
|--|--|
| Type   | BH-400   |
| Number of poles  | 4-pole   |
| Terminal designation, main circuit   | 1;3;5;7;2;4;6;8                                    |
| Type of terminal, main circuit   | Screw terminal                                     |
| Rated cross section area,main circuit  | 120-240mm <sup>2</sup>                             |
| Type of onductor   | 120-240mm <sup>2</sup> ( Ringd:Solid or Stranded ) |
| Number of conductors per terminal  | 1  |
| Required preparation of the conductor  | Yes  |
| Stripping length(mm),main circuit  | 25mm   |
| Tightening torque(M10),main circuit  | Min:15N · m  |
|  | Max:20N · m  |

WARNING Verify that all connections(including bridging link connections) are suitable for the rated current, prepared to ensure only conductive parts are clamped and tightened to the manufacturers required torque before energization.

**Derating data**

**Derating Temperature**

| Tem    |         | -40°C ~ +60°C | +65°C | +70°C | +75°C | +80°C | +85°C |
|--------|---------|---------------|-------|-------|-------|-------|-------|
| Type   | Current |               |       |       |       |       |       |
| BH-400 | 400A    | 400A          | 395A  | 390A  | 385A  | 380A  | 375A  |

**Derating Altitude**

| Altitude                          | 2000m   | 3000m   | 4000m   | 5000m   |
|-----------------------------------|---------|---------|---------|---------|
| Power frequency withstand voltage | 3820VDC | 3820VDC | 3820VDC | 3820VDC |
| Isolation voltage                 | 1500VDC | 1500VDC | 1500VDC | 1500VDC |
| Working current                   | 400A    | 400A    | 380A    | 370A    |
| Working voltage                   | N / A   |         |         |         |

**Installation and use**

The connecting conductor shall be copper conductor or equivalent copper row.The sectional area shall be selected according to the table.

| Rated current(A)                                       | 320A               | 400A               |
|--|--------------------|--------------------|
| The area of a wire or copper conductor mm <sup>2</sup> | 185mm <sup>2</sup> | 240mm <sup>2</sup> |





**UL98B**

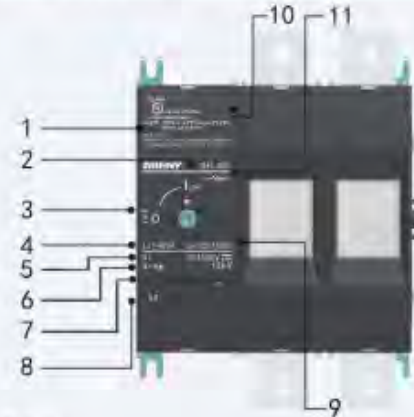
- 1 Brand
- 2 Model
- 3 On Off
- 4 Rated Current
- 5 Nominal Insulation Voltage
- 6 Rated Withstand Voltage
- 7 Utilization Category
- 8 Auxiliary Contact
- 9 Rated Voltage
- 10 Certificate Mark
- 11 Electrical Symbol

**Application**

**ZBENY** BH-400 DC disconnect switch is designed and developed for solar PV inverter, combiner box or any DC equipments build-in according to UL98B. The DC load break switches provide safety isolation for one DC circuit up to 1500VDC 400A.

High capacity 10KA for 50ms test and patented DC arc extinguishing chamber ensure fast disconnection and reliable operation for longer working life.

**Appearance Introduction**



**Type Instruction**

|                        |   |             |   |      |   |  |   |  |   |   |
|------------------------|---|-------------|---|------|---|--|---|--|---|---|
| BH                     | - | 400         | - | 2P   | - | 400A   | - | A  | - | AX  |
| ↓                      |   | ↓           |   | ↓    |   | ↓  |   | ↓  |   | ↓   |
| Model                  |   | Max Current |   | Pole |   | Rated Current  |   | Assembling way   |   | Auxiliary contact   |
| PV DC Isolation Switch |   | 400A        |   | 2P   |   | <input type="checkbox"/> 320A<br><input type="checkbox"/> 400A |   | <input type="checkbox"/> Blank<br><input type="checkbox"/> A <input type="checkbox"/> B<br><input type="checkbox"/> A1 |   | <input type="checkbox"/> without<br><input type="checkbox"/> with |

**Parameter**

| Electrical Characteristics                     |      |                      |
|--|------|----------------------|
| Rated Working Voltage                          | Ue   | 1000V / 1500V        |
| Rated Current                                  | Ie   | 320A / 400A          |
| Rated impulse withstand voltage                | Uimp | 12kV                 |
| Rated short-time withstand current             | Icw  | 10kA/50ms            |
| Rated short-circuit making capacity            | Icm  | 10kA/50ms            |
| Rated conditional short-circuit current(kA)    |      | 10kA                 |
| Installation Environment                       |      |                      |
| Number of cycles of operation(With current)    |      | 400                  |
| Number of cycles of operation(Without current) |      | 5000                 |
| Pole   |      | 2                    |
| Mounting                                       |      | Base Screws Mounting |
| Screws for mounting(M5)                        |      | 2.0N·m ~ 3.0N·m      |
| Wiring Screw(M10)                              |      | 15N·m ~ 20N·m        |
| Ambient temperature allowed between            |      | -40°C ~ +85°C        |
| Storage temperature allowed between            |      | -40°C ~ +85°C        |
| Relative Humidity                              |      | 90%                  |
| Pollution degree                               |      | 3                    |
| IP rating terminals                            |      | IP20                 |
| Outside the ark handle                         |      | IP65                 |

**Wiring Graph**

| Model     | Wiring Graph    | Ue rated operational voltage DC Volts | Rated operational current | Poles in series | Number of Strings |
|-----------|-----------------|---------------------------------------|---------------------------|-----------------|-------------------|
| BH-400-2P | <br>Example<br> | 1000V/1500V                           | 320A/400A                 | 1               | 1                 |

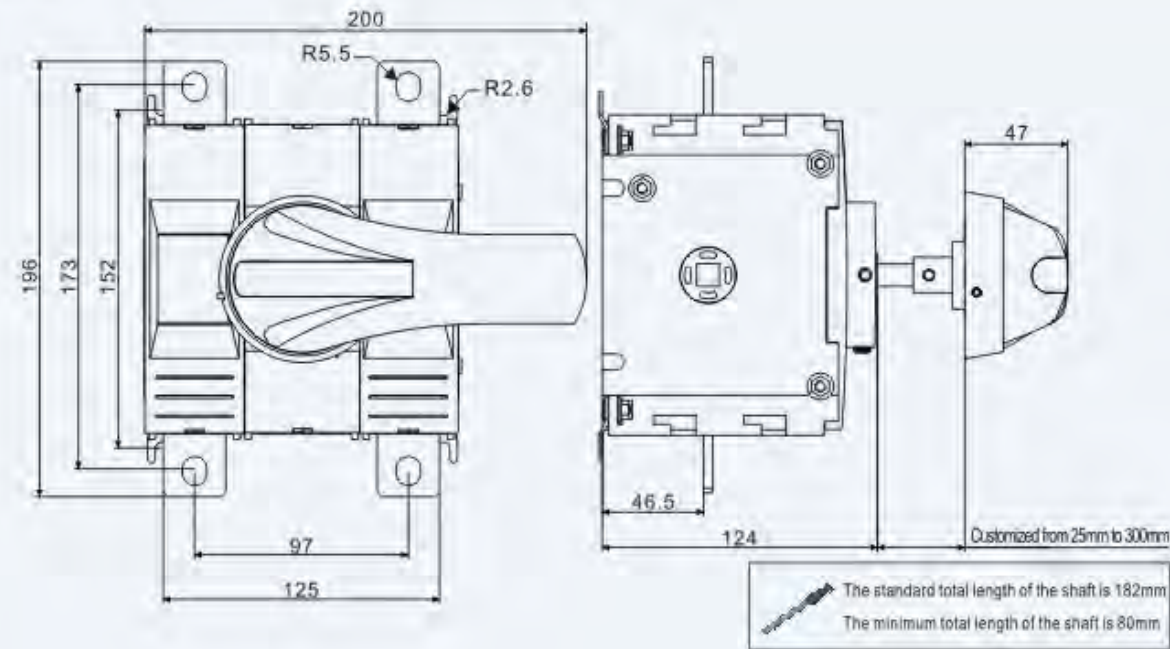
**Product Selection**

| Model     | Front Operation |             |             | The side operation |
|-----------|-----------------|-------------|-------------|--------------------|
|           | BH-400-2P       | BH-400-2P-A | BH-400-2P-B | BH-400-2P-A1       |
| BH-400-2P |                 |             |             |                    |

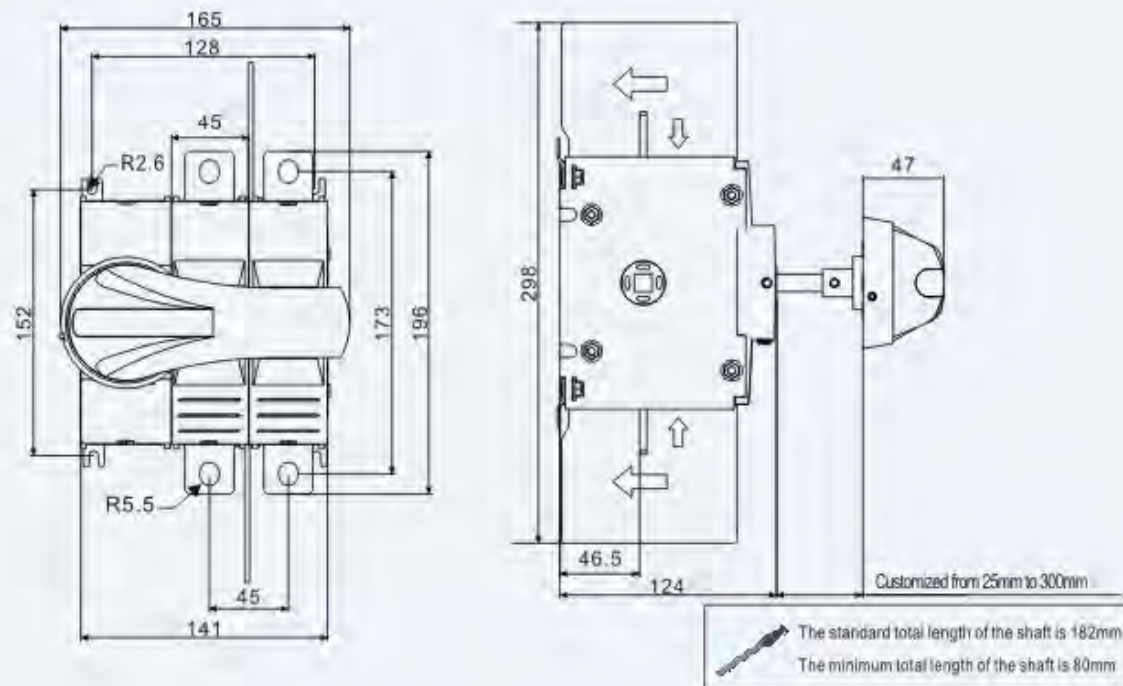


**Dimensions(mm)**

BH-400-2P

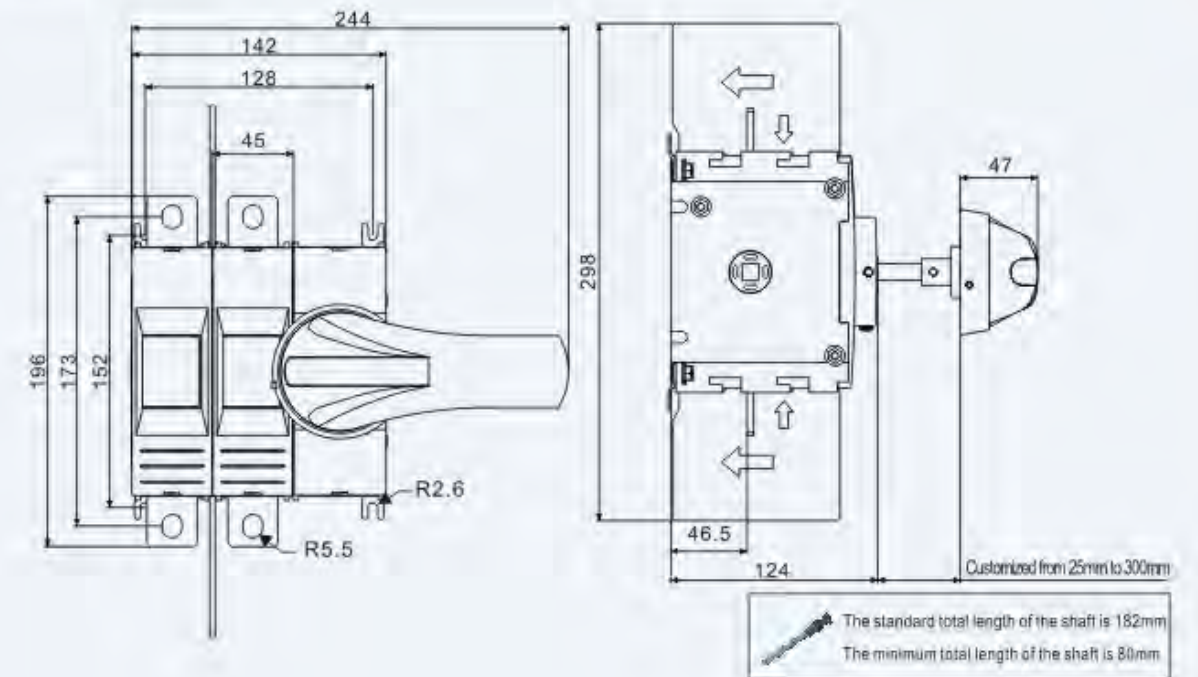


BH-400-2P-A

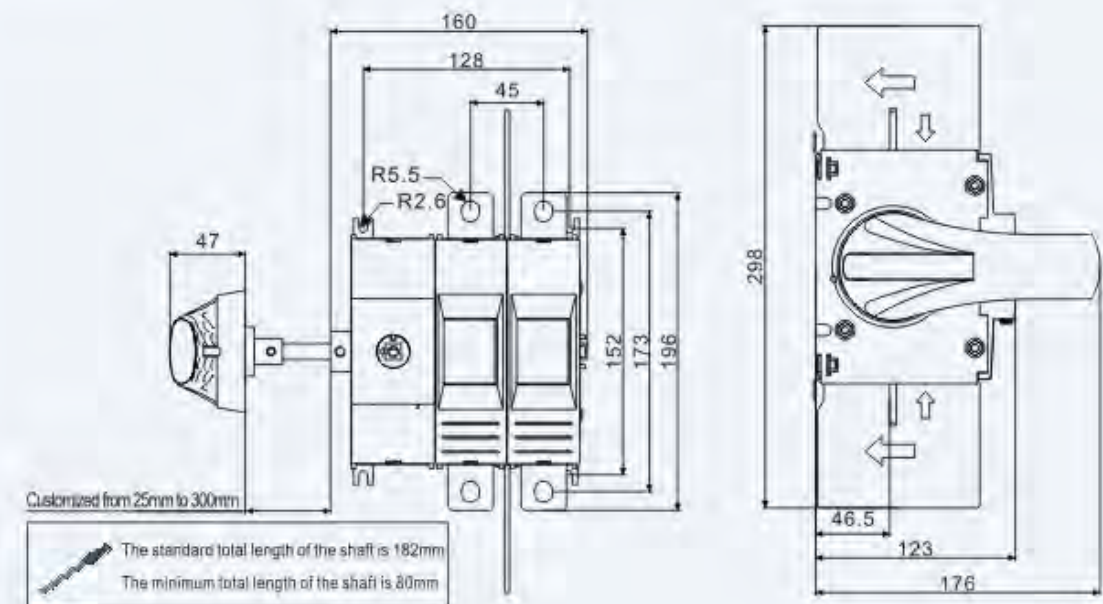


**Dimensions(mm)**

BH-400-2P-B



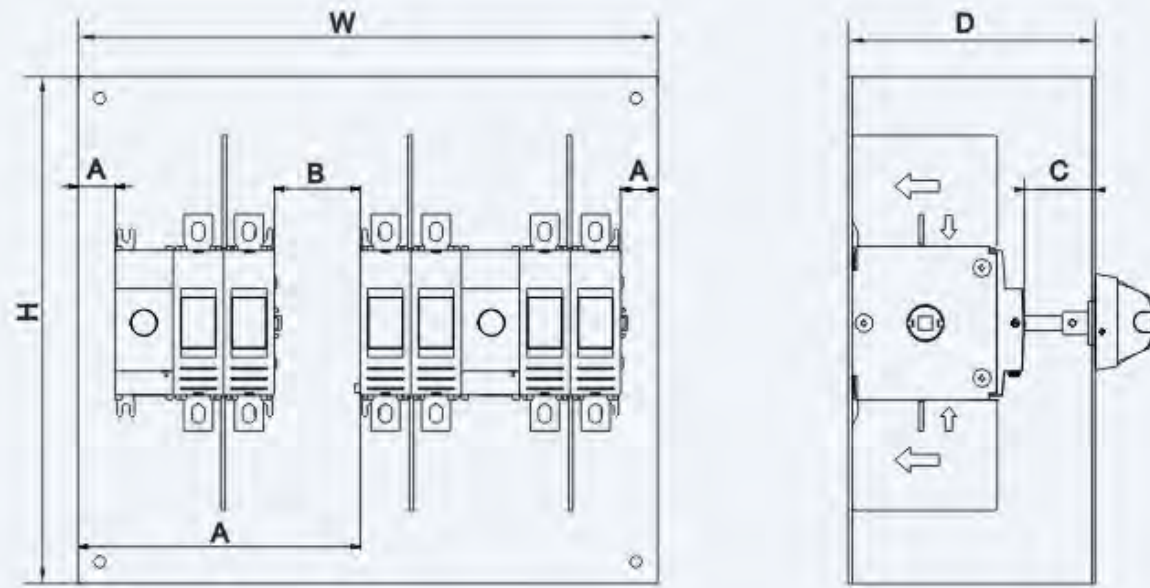
BH-400-2P-A1





**Dimensions(mm)**

Minimum enclosure dimensions UL98  
 Dimensions minimum des coffrets UL98B  
 Dimensiones minimas de las cajas UL98B

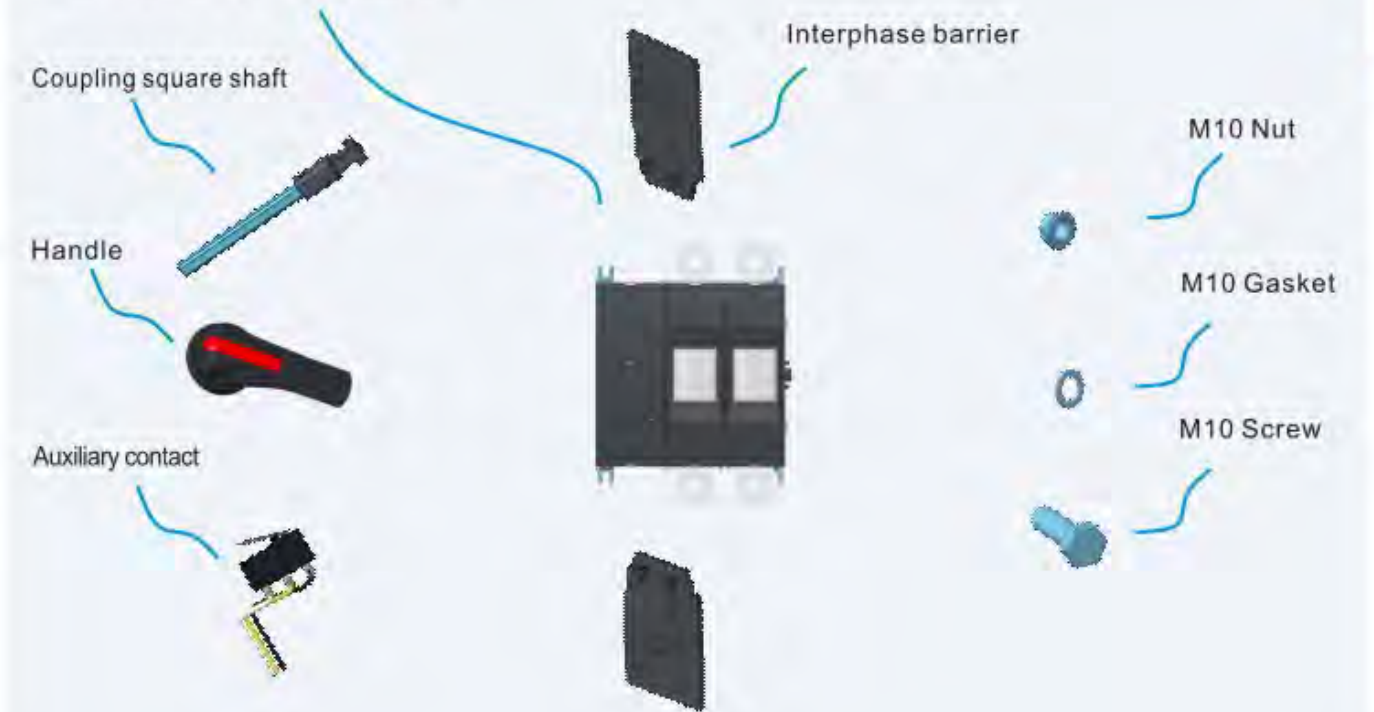


| Minimum enclosure size | Size                  |
|------------------------|-----------------------|
| H × W × D              | 400mm × 350mm × 180mm |

| Clearance | Size   |
|-----------|--------|
| A min.    | 25.4mm |
| B min.    | 50.8mm |
| C min.    | 22mm   |

**Switches and accessories**

Front and side operable products



**Accessory**

| Name                   | The attachment list  |
|------------------------|--|
| standard configuration | <input checked="" type="checkbox"/> Handle   |
|                        | <input checked="" type="checkbox"/> Coupling square shaft (The standard length is 182mm) |
|                        | <input checked="" type="checkbox"/> Interphase barrier                                   |
|                        | <input checked="" type="checkbox"/> M10 Binding kits                                     |
| apolegamy              | <input checked="" type="checkbox"/> Specification  |
|                        | <input type="checkbox"/> Auxiliary contact   |
|                        | <input type="checkbox"/> Coupling square shaft Custom length ____mm                      |



## Derating data

### Derating Temperature

| Type   | Current | Tem           |       |       |       |       |       |
|--------|---------|---------------|-------|-------|-------|-------|-------|
|        |         | -40°C ~ +60°C | +65°C | +70°C | +75°C | +80°C | +85°C |
| BH-400 | 400A    | 400A          | 395A  | 390A  | 385A  | 380A  | 375A  |

### Derating Altitude

| Altitude                          | 2000m   | 3000m   | 4000m   | 5000m   |
|-----------------------------------|---------|---------|---------|---------|
| Power frequency withstand voltage | 3820VDC | 3820VDC | 3820VDC | 3820VDC |
| Isolation voltage                 | 1500VDC | 1500VDC | 1500VDC | 1500VDC |
| Working current                   | 400A    | 400A    | 380A    | 370A    |
| Working voltage                   | N / A   |         |         |         |

## Installation and use

The connecting conductor shall be copper conductor or equivalent copper row. The sectional area shall be selected according to the table.

| Rated current(A)                                       | 320A               | 400A               |
|--|--------------------|--------------------|
| The area of a wire or copper conductor mm <sup>2</sup> | 185mm <sup>2</sup> | 240mm <sup>2</sup> |

# BB1-63

## PV DC Isolator Switches

Welcome to your website for more information:

[www.beny.com](http://www.beny.com)







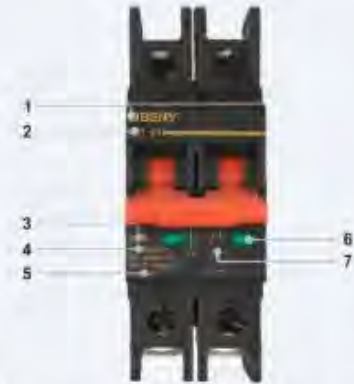
- 1 Brand
- 2 Type
- 3 Rated Current
- 4 Rated Voltage
- 5 Standard Code
- 6 Indicator
- 7 Wiring Diagram

- Nonpolarity
- High Short-Circuit / Breaking Capacity
- Functions: Overload, Short Circuit, Unfrequent Operation and, Anti-reflux Protection
- Rated Voltage: 1200V, Ultimate
- Breaking Capacity : 6kA
- Rated Current: 63A
- Comply with : IEC 60947-2/GB/T 14048.2

**Application**

**ZBENY** BB1 Series PV Mini Circuit Breakers are mainly applied to DC solar combiner box ,Controller etc. The main function include overload protection ,Anti-reflux protection and short-circuit protection. Scientific design of arc-extinguishing system keep solar system more safe. Max Voltage up to 1200V DC, current up to 63A.

**Appearance Introduction**



**Type Instruction**

|                               |                   |  |                |   |                         |
|-------------------------------|-------------------|--|----------------|---|-------------------------|
| BB1                           | 63                | MF   | 4P             | 25  | 1200V                   |
| Product Code                  | Max Rated Current | Accessory  | Pole           | Rated Current   | Rated Voltage           |
| PV Miniature Circuit Breakers | 63A               | MF-MX-DP, Short Release/Auxiliary Contact, MX, Auto Release, DP Auxiliary Contact, Without BB1-63 Neutrons | 1P, 2P, 3P, 4P | 3A, 4A, 6A, 10A, 13A, 16A, 20A, 25A, 32A, 40A, 50A, 63A | 120V, 600V, 900V, 1200V |

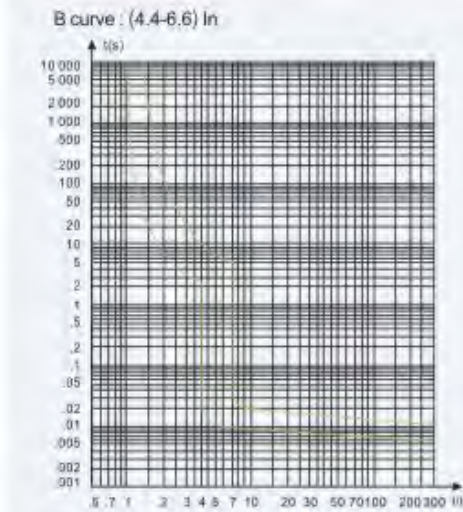
**Parameter**

| Electrical Characteristics      |                | BB1-63  |         |         |          |
|---------------------------------|----------------|---|---------|---------|----------|
| Type                            |                | BB1-63  |         |         |          |
| Comply with                     |                | IEC 60947-2/GB/T 14048.2                                    |         |         |          |
| Pole                            |                | 1P  | 2P      | 3P      | 4P       |
| Rated Working Voltage Ue        |                | 300V DC   | 600V DC | 900V DC | 1200V DC |
| Max Rated Current               |                | 63A   |         |         |          |
| Rated Current In                |                | 3A, 4A, 6A, 10A, 13A, 16A, 20A, 25A, 32A, 40A, 50A, 63A     |         |         |          |
| Rated Insulated Voltage Ui      |                | 1200V DC  |         |         |          |
| Rated Impulsed Voltage Uimp     |                | 6kV   |         |         |          |
| Ultimate Breaking Capacity Icu  |                | 6kA   |         |         |          |
| Run Breaking Capacity Ics       |                | 6kA   |         |         |          |
| Tripping Type                   |                | Thermal Magnetic Type                                       |         |         |          |
| Service Life/cycle Operation    |                |   |         |         |          |
| Mechanical                      | Actual Value   | 20000   |         |         |          |
|                                 | Standard Value | 8500  |         |         |          |
| Electrical                      | Actual Value   | 1000  |         |         |          |
|                                 | Standard Value | 300   |         |         |          |
| 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%) |         |         |          |
| Resistance to Shock             |                | 2.6 IEC60068  |         |         |          |
| Resistance to Impact            |                | 2.27 IEC60068   |         |         |          |

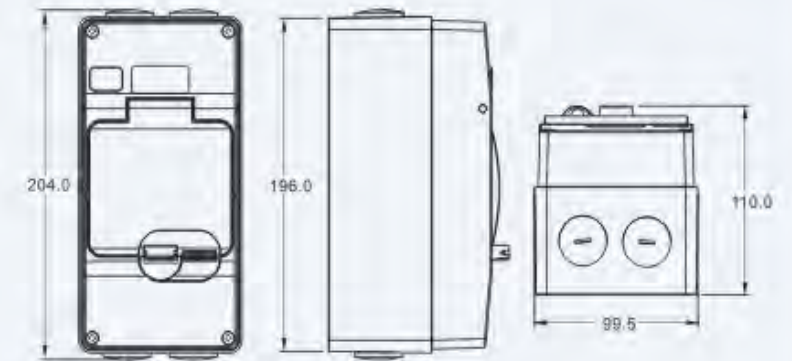
**Wiring Method**

| Pole                  | 1P     | 2P     |        | 3P     |        | 4P     |        |
|-----------------------|--------|--------|--------|--------|--------|--------|--------|
| Type                  |        |        |        |        |        |        |        |
| Contacts Wiring graph | 1A<br> | 2A<br> | 2B<br> | 3A<br> | 3B<br> | 4A<br> | 4B<br> |

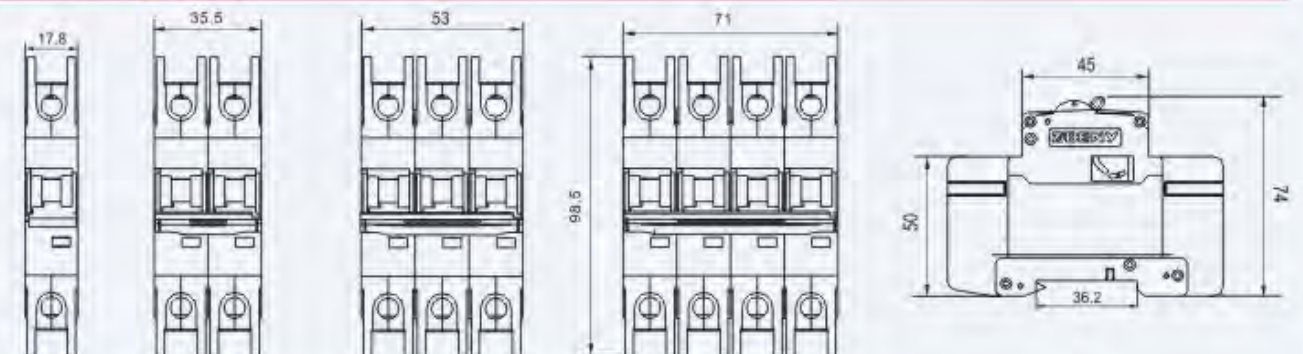
**Characteristic Curve**



**Dimensions(mm)**



**Dimensions(mm)**



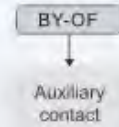


**Auxiliary contact for BB1-63**

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

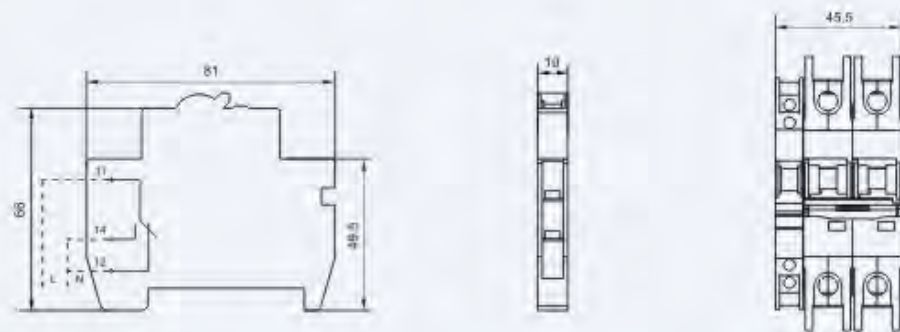
**Type Instruction**



| Auxiliary contact                             |                                       |
|---|---------------------------------------|
| Electrical parameters                         |                                       |
| Contacts                                      | BY-OF<br>2 changeover                 |
| Contact function                              | auxiliary contact                     |
| Tested according to                           | IEC/EN 62019                          |
| Rated op. voltage                             | AC12      Ie=3A Ue=380/415V           |
|   | DC 12      Ie=1A Ue=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                          |



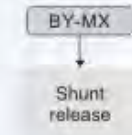
**Dimensions(mm) (With Auxiliary Contact)**



**Shunt Release for BB1-63**

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

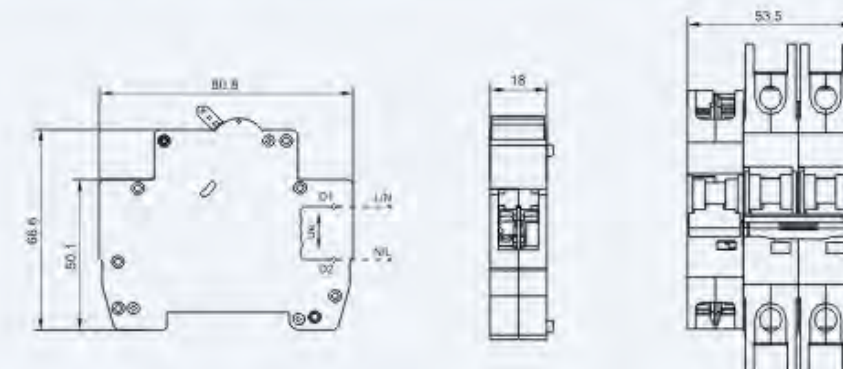
**Type Instruction**



| Shunt release                 |                                       |                   |
|-------------------------------|---------------------------------------|-------------------|
| Electrical parameters         |                                       |                   |
| Contacts                      | BY-MX<br>1 changeover (CO)            |                   |
| Contact function              | Shunt release                         |                   |
| Tested according to           | IEC/EN 60947-5-1                      |                   |
| Rated op. voltage             | AC                                    | Ie=2A Ue=220/415V |
|                               | DC                                    | Ie=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)**

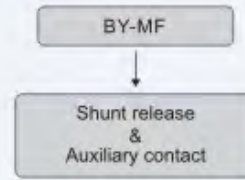




**Shunt Release and Auxiliary contact for BB1-63**

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

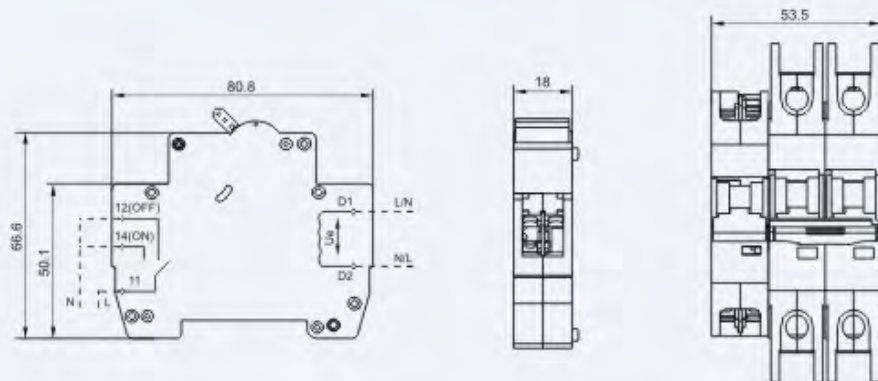
**Type Instruction**



| BY-MF                         |                                       |    |                                      |
|-------------------------------|---------------------------------------|----|--------------------------------------|
| Electrical parameters         |                                       |    |                                      |
| Contacts                      | BY-MF<br>2changeover (CO)             |    |                                      |
| Contact function              | Shunt Release&Auxiliary Contact       |    |                                      |
| Rated op. voltage             | Shunt release                         | AC | le=2A Ue=220/415V<br>le=2A Ue=24/48V |
|                               |                                       | DC | le=2A Ue=24/48V                      |
| Rated frequency               | Auxiliary contact                     | AC | le=3A Ue=220/415V                    |
|                               | 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                           |    |                                      |



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



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**BB1-63  
PV Miniature Circuit  
Breakers**



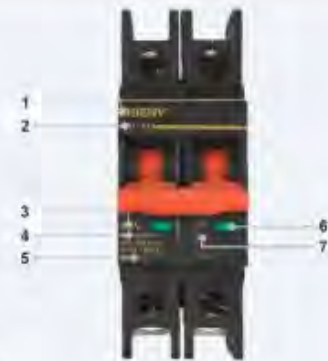
- 1 Brand
- 2 Type
- 3 Rated Current
- 4 Rated Voltage
- 5 Standard Code
- 6 Indicator
- 7 Wiring Diagram

- 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

**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**

|                              |                   |  |      |  |               |
|------------------------------|-------------------|--|------|--|---------------|
| BB1                          | 63                | MF   | 4P   | 25   | 1200V         |
| Product Code                 | Max Rated Current | Structure  | Pole | Rated Current  | Rated Voltage |
| PV Miniature Circuit Breaker | 63A               | MF MX-OP<br>Main Tripping Unit & Auxiliary Contact<br>MX-OP Main Tripping Unit<br>OP-2 Auxiliary Contact<br>With Auxiliary Contact | 4P   | 2A, 3A, 4A, 6A, 10A, 13A, 16A, 20A, 25A, 32A, 40A, 50A | 1200V         |

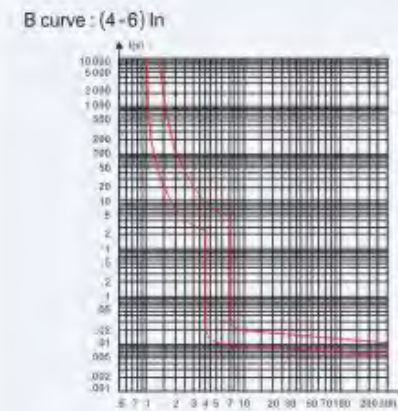
**Parameter**

| Electrical Characteristics       |   |          |
|----------------------------------|---|----------|
| Type                             | BB1-63  |          |
| Comply with                      | UL 489B   |          |
| Pole                             | 2P  | 4P       |
| Rated Working Voltage Ue         | 600V DC   | 1200V DC |
| Conventional thermal current Ith | 63A   |          |
| Rated Current In                 | 2A, 3A, 4A, 6A, 10A, 13A, 16A, 20A, 25A, 32A, 40A, 50A      |          |
| Rated Insulated Voltage Ui       | 1200V DC  |          |
| Rated Impulsed Voltage Uimp      | 6kV   |          |
| Ultimate Breaking Capacity Ics   | 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%) |          |

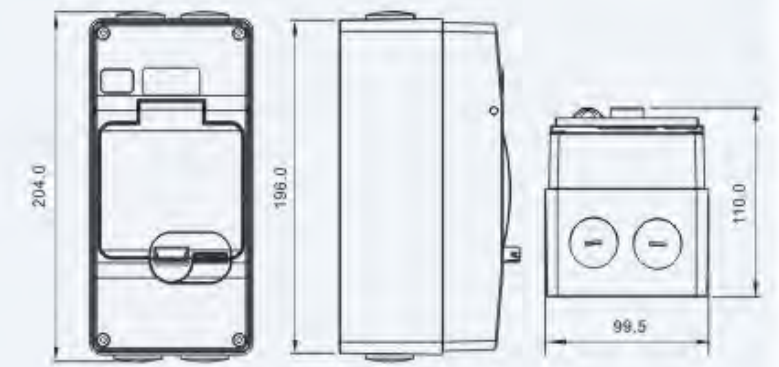
**Wiring Meth**

| Pole                  | 2P     | 4P     |        |
|-----------------------|--------|--------|--------|
| Type                  |        |        |        |
| Contacts Wiring graph | 2B<br> | 4A<br> | 4B<br> |

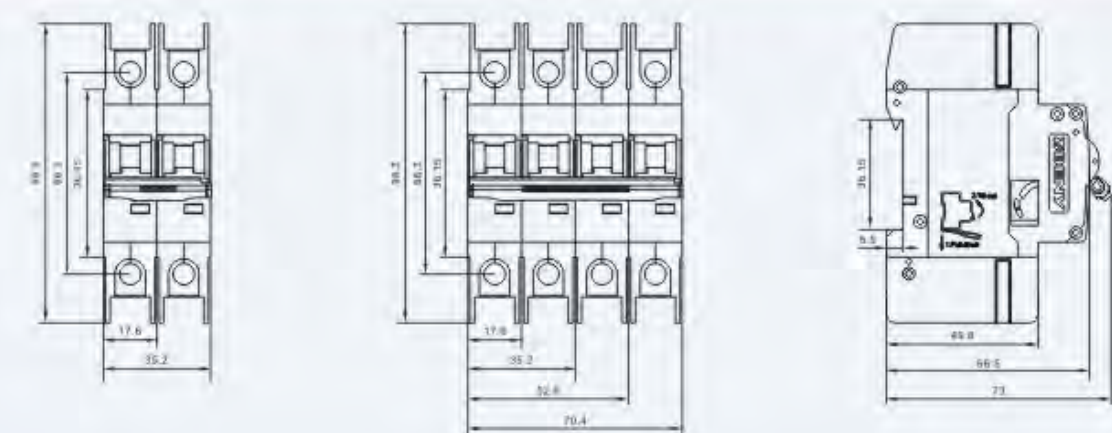
**Characteristic Curve**



**Waterproof Enclosure Dimensions(mm)**



**Dimensions(mm)**



BB1F-63  
with IP65 Waterproof Enclosure

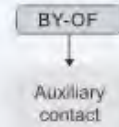


### Auxiliary contact for BB1-63

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

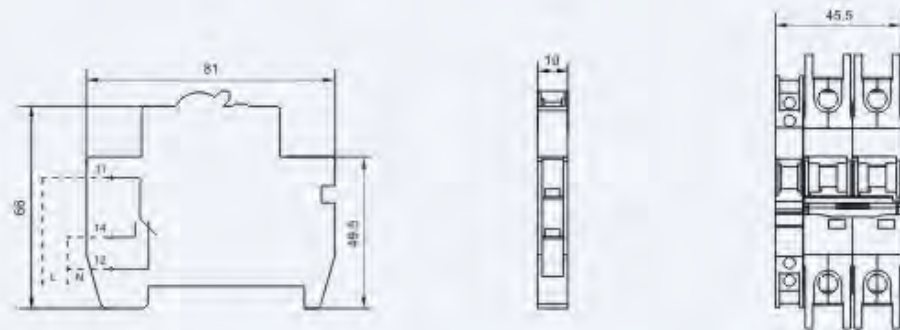
#### Type Instruction



| Auxiliary contact                      |                                       |                   |
|--|---------------------------------------|-------------------|
| Electrical parameters                  |                                       |                   |
| Contacts                               | BY-OF<br>2 changeover                 |                   |
| Contact function                       | auxiliary contact                     |                   |
| Tested according to                    | IEC/EN 62019                          |                   |
| Rated op. voltage                      | AC12                                  | le=3A Ue=380/415V |
|  | DC 12                                 | le=1A Ue=110/125V |
| Min. op. current per contact $I_{min}$ | 10 mA                                 |                   |
| Min. op. voltage per contact $U_{min}$ | 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                          |                   |



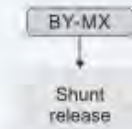
### Dimensions(mm) (With Auxiliary Contact)



### Shunt Release for BB1-63

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

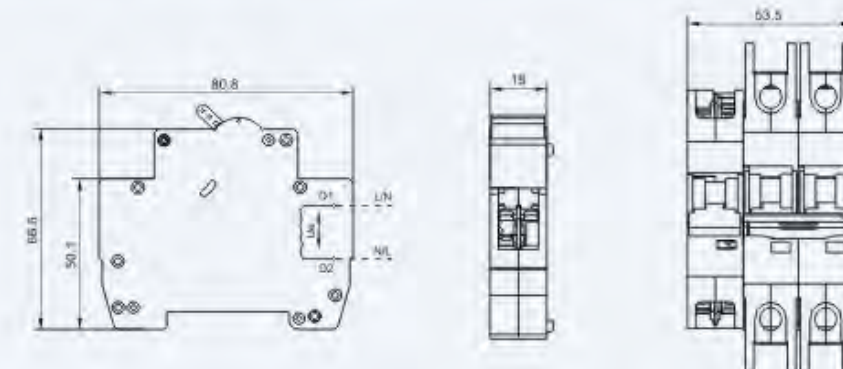
#### Type Instruction



| 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 |
|                               | 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)

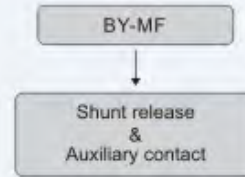




**Shunt Release and Auxiliary contact for BB1-63**

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

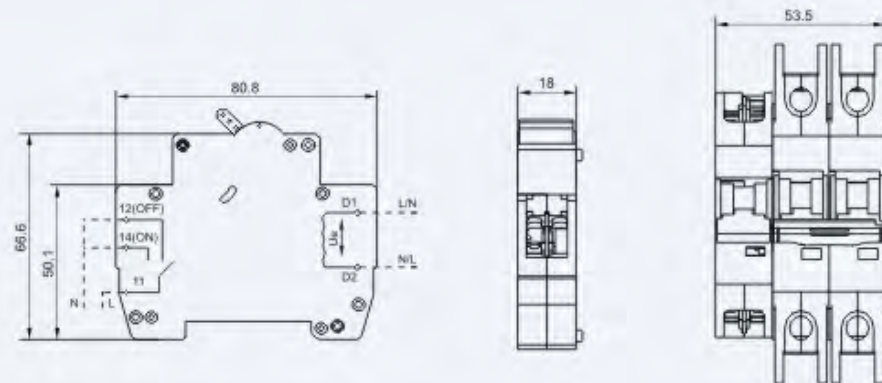
**Type Instruction**



| BY-MF                         |                                       |    |  |
|-------------------------------|---------------------------------------|----|--|
| Electrical parameters         |                                       |    |  |
| Contacts                      | BY-MF<br>2 changeover (CO)            |    |  |
| Contact function              | Shunt Release & Auxiliary Contact     |    |  |
| Rated op. voltage             | Shunt release                         | AC | $I_e=2A$ $U_e=220/415V$<br>$I_e=2A$ $U_e=24/48V$ |
|                               |                                       | DC | $I_e=2A$ $U_e=24/48V$                            |
|                               | Auxiliary contact                     | AC | $I_e=3A$ $U_e=220/415V$                          |
| Rated frequency               | 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)**



# BB2-40

PV Mini Circuit Breakers

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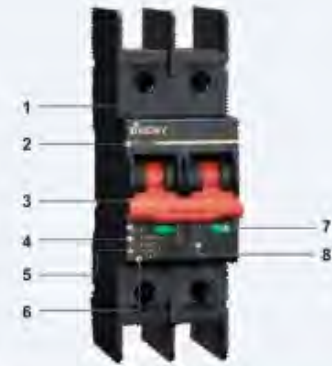
- 1 Brand
- 2 Type
- 3 Rated Current
- 4 Rated Voltage
- 5 Standard Code
- 6 Ultimate Breaking Capacity
- 7 Indicator
- 8 Wiring Diagram

- Nonpolarity
- High Short-Circuit / Breaking Capacity
- Functions: Overload, Short Circuit, Unfrequent Operation and, Anti-reflux Protection
- Rated Voltage: 1500V, Ultimate
- Breaking Capacity : 1.5KA
- Rated Current: 40A
- Comply with : IEC60947-2

**Application**

**ZBENY** BB2-40 Series PV Mini Circuit Breakers are mainly applied to DC solar combiner box ,Controller etc. The main function include overload protection ,Anti-reflux protection and short-circuit protection. Scientific design of arc-extinguishing system keep solar system more safe. Max Voltage up to 1500V DC, current up to 40A.

**Appearance Introduction**



**Type Instruction**

|                          |                   |                |                                      |                        |
|--------------------------|-------------------|----------------|--------------------------------------|------------------------|
| BB2                      | 40                | 2P             | 25                                   | 1000V                  |
| ↓                        | ↓                 | ↓              | ↓                                    | ↓                      |
| Product Code             | Max Rated Current | Pole           | Rated Current                        | Rated Voltage          |
| PV Mini Circuit Breakers | 40A               | 1P<br>2P<br>3P | 2A,4A,6A,10A,13A,16A,20A,25A,32A,40A | 600V<br>1000V<br>1500V |

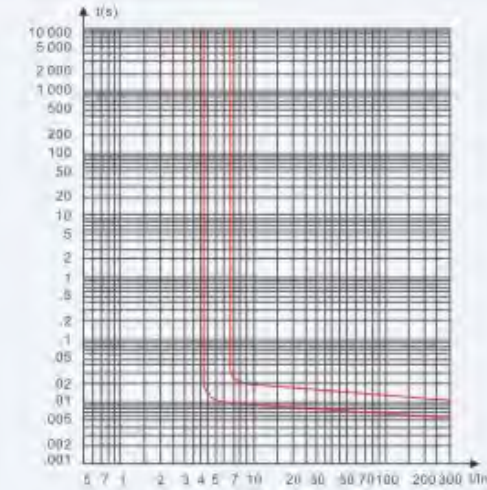
**Parameter**

| Electrical Characteristics      |   | BB2-40   |          |  |
|---------------------------------|---|----------|----------|--|
| Type                            | BB2-40  |          |          |  |
| Comply with                     | IEC60947-2/GB14048.2                                    |          |          |  |
| Pole                            | 1P  | 2P       | 3P       |  |
| Rated Working Voltage Ue        | 600V DC   | 1000V DC | 1500V DC |  |
| Max Rated Current               | 40A   |          |          |  |
| Rated Current In                | 2A,4A,6A,10A,13A,16A,20A,25A,32A,40A                    |          |          |  |
| Rated Insulated Voltage Ui      | 1500V DC  |          |          |  |
| Rated Impulsed Voltage Uimp     | 8KV   |          |          |  |
| Ultimate Breaking Capacity Icu  | 1.5KA   |          |          |  |
| Run Breaking Capacity Ics       | 1.5KA   |          |          |  |
| Tripping Type                   | Thermal Magnetic Type                                   |          |          |  |
| Service Life/cycle Operation    |   |          |          |  |
| Mechanical                      | Actual Value  | 20000    |          |  |
|                                 | Standard Value  | 8500     |          |  |
| Electrical                      | Actual Value  | 4000     |          |  |
|                                 | Standard Value  | 1500     |          |  |
| 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 Humidity arrived to 55°C,Relative Humidity95%) |          |          |  |
| Resistance to Shock             | 2.6 IEC60068  |          |          |  |
| Resistance to Impack            | 2.27 IEC60068   |          |          |  |

**BB2-40**  
PV Mini Circuit Breaker

**Characteristic Curve**

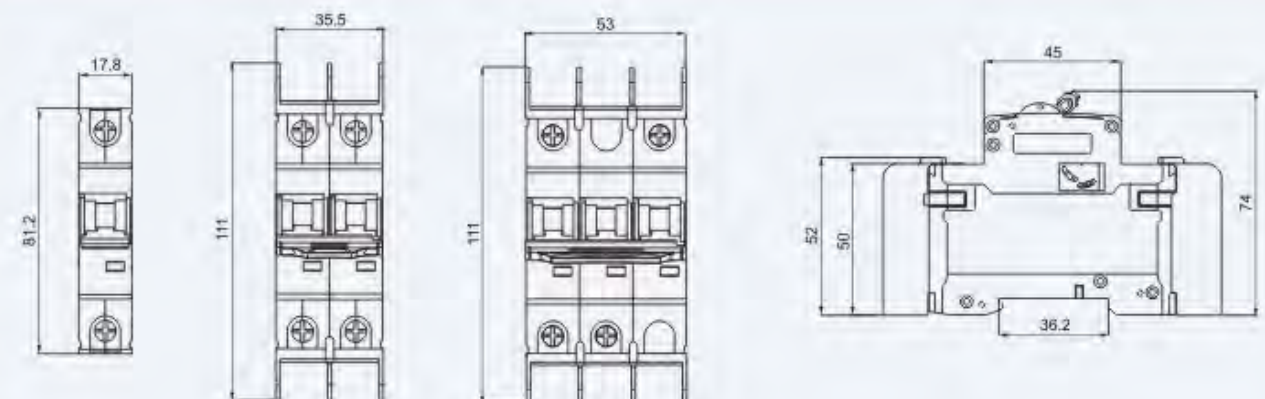
B curve : (4.4-6.6) In



**Wiring Method**

| Pole                  | 1P | 2P | 3P |
|-----------------------|----|----|----|
| Type                  |    |    |    |
| Contacts Wiring graph |    |    |    |

**Dimensions(mm)**





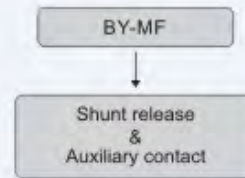




**Shunt Release and Auxiliary contact for BB2-40**

- Shunt Release and Auxiliary contact for installation devices BB2-40
- Shunt release and Auxiliary contact is mounted on the left side of circuit breaker

**Type Instruction**



**BY-MF**

**Electrical parameters**

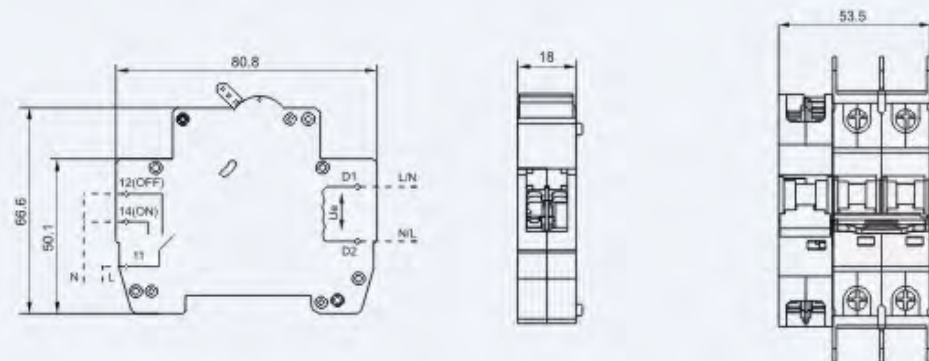
| BY-MF             |                                   |    |                   |
|-------------------|-----------------------------------|----|-------------------|
| Contacts          | 2 changeover (CO)                 |    |                   |
| Contact function  | Shunt Release & Auxiliary Contact |    |                   |
| Rated op. voltage | Shunt release                     | AC | Ie=2A Ue=220/415V |
|                   |                                   | DC | Ie=2A Ue=24/48V   |
|                   | Auxiliary contact                 | AC | Ie=3A Ue=220/415V |
| 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                           |  |  |



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







- 1 Brand
- 2 Type
- 3 Rated Current
- 4 Rated Voltage
- 5 Breaking Capacity
- 6 Operation Breaking Capacity
- 7 Standard Code
- 8 Certificate Symbol
- 9 Wiring Diagram
- 10 Characteristic Curve

- High Short-Circuit/Breaking Capacity
- Protection Functions: Overload, Short circuit, Unfrequent Operation
- Rated Voltage up to 1000V DC
- Rated Current 125A, 250A
- IEC 60947-2, GB/T 14048.2
- Easy Installation

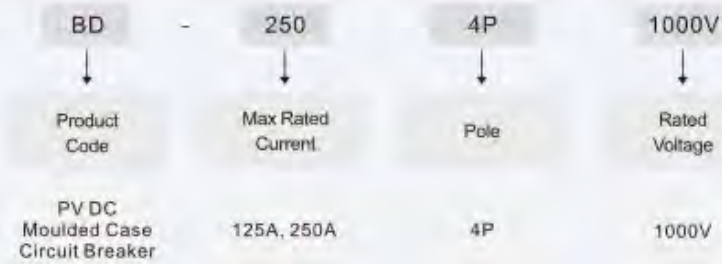
**Application**

ZBENY BD series PV DC Moulded Case Circuit Breaker (MCCB) are mainly used in large solar power system, which are applied for solar DC combiner box, inverter and DC power distribution cabinet. Rated voltage up to 1000V DC, current up to 250A, with the function of overload protection and short-circuit protection.

**Appearance Introduction**



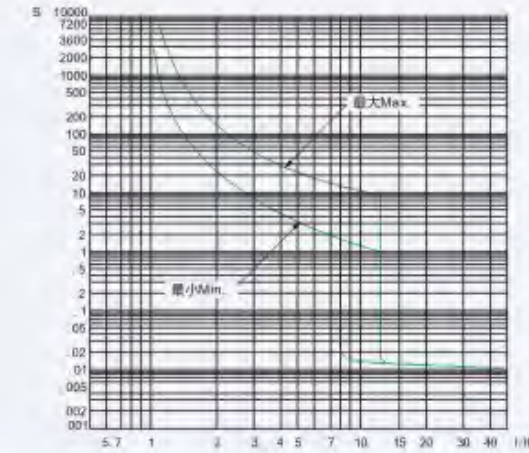
**Type Instruction**



**Parameter**

| BD series PV DC MCCB                    |        |  |                    |
|---|--------|--|--------------------|
| Type                                    |        | BD-125                                   | BD-250             |
| Type                                    |        | BD-125                                   | BD-250             |
| Pole                                    |        | 4P                                       | 4P                 |
| Max Rated Current                       |        | 125A                                     | 250A               |
| Electrical Characteristics              |        |  |                    |
| Rated Working Voltage                   | Ue     | 1000V DC                                 | 1000V DC           |
| Rated Current                           | In(A)  | 63/80<br>100/125                         | 125/160<br>200/250 |
| Rated Insulated Voltage                 | Ui     | 1000V DC                                 |                    |
| Rated Impulsed Voltage                  | Uimp   | 8KV                                      |                    |
| 1 Min Power Frequency Withstand Voltage |        | 3.8 KV                                   | 3.8 KV             |
| Ultimate Breaking Capacity              | Icu    | 20 KA                                    | 20 KA              |
| Run Breaking Capacity                   | Ics    | 15 KA                                    | 15 KA              |
| Protection                              |        |  |                    |
| Tripping Type                           |        | Thermal Magnetic Type                    |                    |
| Control And Indication                  |        |  |                    |
| Control Mode                            | Manual | Direct (RHD)                             | Optional           |
|   |        | Extended(ERH)                            | Optional           |
|   | MOD    |  | Optional           |
| Shunt Release (SHT)                     |        |  | Optional           |
| Auxiliary Release                       |        |  | Optional           |
| Terminal End Cover                      |        |  | Yes                |
| Interphase Barriers                     |        |  | Yes                |
| Service Life/Cycle Operation            |        |  |                    |
| Mechanical                              |        | 14000                                    | 14000              |
| Electrical                              |        | 2000                                     | 2000               |
| Size (L x W x H)                        |        | 150.5x122x92.5                           | 165x140x88         |
| Ingress Protection                      |        | All Sides IP40, Connection Terminal IP20 |                    |
| Installation Environment                |        |  |                    |
| Comply With                             |        | IEC60947-2/GB14048.2                     |                    |
| Storage Temperature                     |        | -40°C~+85°C                              |                    |
| Wiring screw/tightening torque          |        | M8*20mm/s11N.m                           |                    |
| Mounting screw/tightening torque        |        | M4*75mm/s2.4N.m                          |                    |

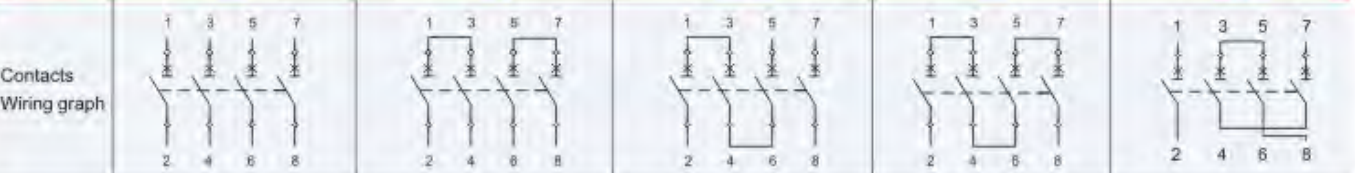
**Characteristic Curve**



| Type | BD-125 | BD-250 |
|------|--------|--------|
|------|--------|--------|

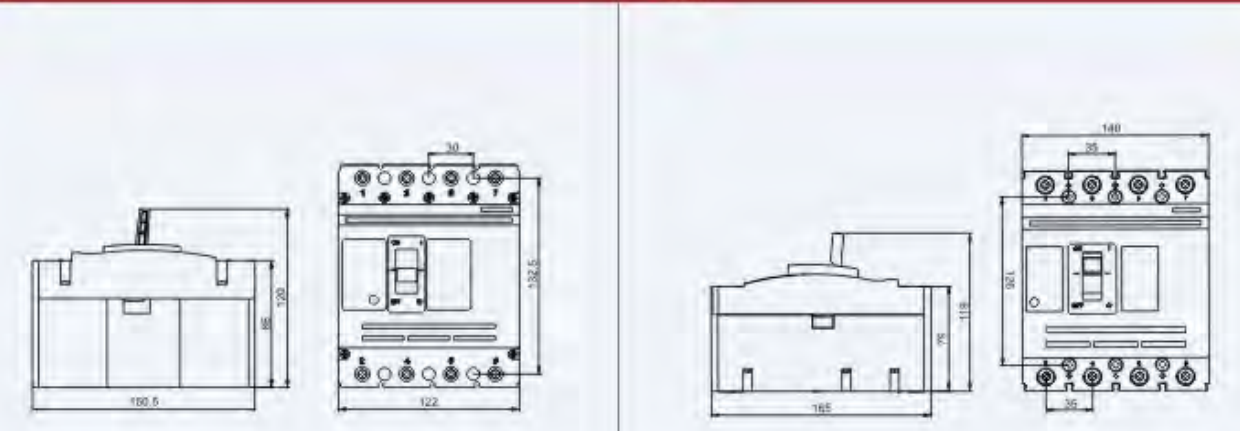


| Type Code | 4A | 4B | 4C | 4D | 4S |
|-----------|----|----|----|----|----|
|-----------|----|----|----|----|----|



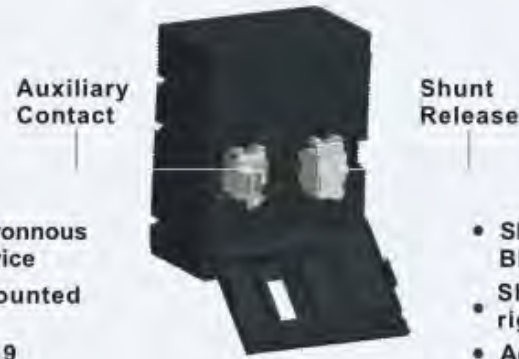
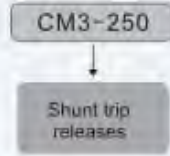
**Dimensions(mm)**

| 125A | 250A |
|------|------|
|------|------|





**Type Instruction**



- Auxiliary contacts synchronous with main contacts of device
- Auxiliary Contacts is mounted on the left
- According to IEC/EN 62019

- Shunt Release for installation devices BD-250
- Shunt Release is mounted on the right
- According to IEC/EN 62019

**Auxiliary contact unit**

**Electrical parameters**

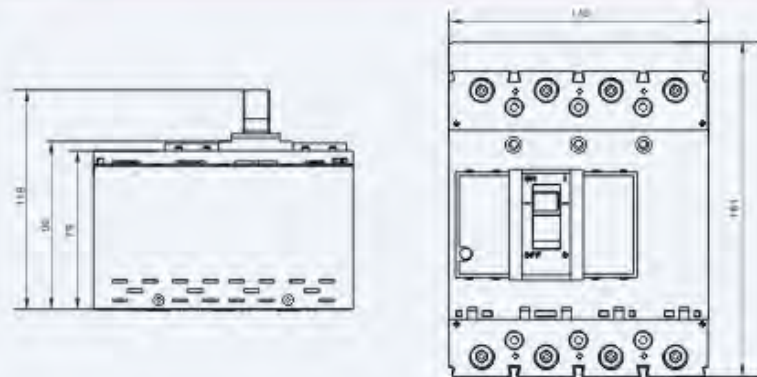
|  |       | CDM3-250          |         |
|--|-------|-------------------|---------|
| Contacts                                     |       | 1 changeover (CO) |         |
| Contact function                             |       | auxiliary         |         |
| Tested according to                          |       | IEC/EN 62019      |         |
| Rated op. voltage                            | AC 13 | Ie=3A             | Ue=250V |
|  | AC 15 | Ie=2A             | Ue=250V |
|  | DC 12 | Ie=0.5A           | Ue=110V |
| Min. op. current per contact I <sub>tr</sub> |       | 10 mA             |         |
| Min. op. voltage per contact U <sub>tr</sub> |       | 11V DC            |         |
| Rated frequency                              |       | 50/60 Hz          |         |

**Shunt trip releases**

**Electrical parameters**

|                     |    | CM3-250             |             |
|---------------------|----|---------------------|-------------|
| Contacts            |    | 1 changeover (CO)   |             |
| Contact function    |    | Shunt trip releases |             |
| Tested according to |    | IEC/EN 62019        |             |
| Rated op. voltage   | AC | Ie=2A               | Ue=220/415V |
|                     | DC | Ie=2A               | Ue=24/48V   |
| Min. op. voltage    |    | 8.4 V               |             |
| Min. op. current    |    | 1A                  |             |
| Max. op. voltage    |    | 26.4 V              |             |
| Max. op. current    |    | 2A                  |             |
| Rated frequency     |    | 50/60 Hz            |             |

**Dimensions(mm)**



**BDM Series  
PV DC Moulded Case  
Circuit Breaker**



- 1 Brand
- 2 Type
- 3 Rated Current
- 4 Rated Voltage
- 5 Breaking Capacity
- 6 Operation Breaking Capacity
- 7 Standard Code

- High Short-Circuit/Breaking Capacity
- Protection Functions; Overload, Short circuit, Unfrequent Operation
- Rated Voltage up to 500V DC
- Rated Current 125A, 250A
- IEC60947-2, GB14048-2
- Easy Installation



BDM-125  
with IP65 Enclosure

**Application**

**ZBENY** BDM series PV DC Moulded Case Circuit Breaker (MCCB) are mainly used in large solar power system, which are applied for solar DC combiner box, inverter and DC power distribution cabinet. Rated voltage up to 500V DC, current up to 250A, with the function of overload protection and short-circuit protection.

**Appearance Introduction**



**Type Instruction**

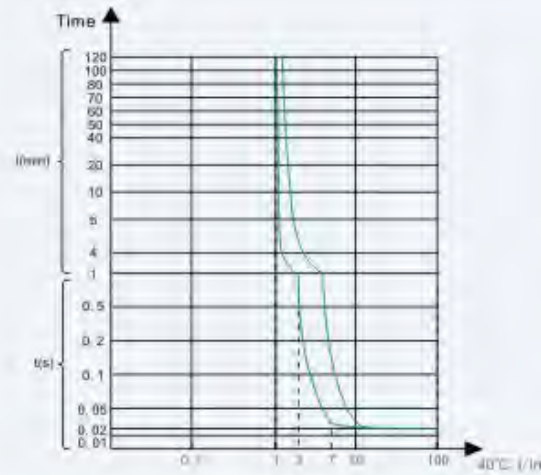


**Parameter**

| <b>BDM series PV DC MCCB</b>               |  |  |
|--|--|--|
| Type                                       | BDM-125                                  | BDM-250                                |
| Pole                                       | 2P                                       |  |
| Max Rated Current                          | 125A                                     | 250A                                   |
| <b>Electrical Characteristics</b>          |  |  |
| Rated Working Voltage U <sub>e</sub>       | 500V DC                                  |  |
| Rated Current I <sub>n</sub> (A)           | 65A, 80A, 100A, 125A                     | 125A, 160A, 200A, 250A                 |
| Rated Insulated Voltage U <sub>i</sub>     | 500V DC                                  |  |
| Rated Impulsed Voltage U <sub>imp</sub>    | 8KV                                      |  |
| 1 Min Power Frequency Withstand Voltage    | 3.8 KV                                   |  |
| Ultimate Breaking Capacity I <sub>cu</sub> | 15 KA                                    |  |
| Run Breaking Capacity I <sub>cs</sub>      | 15 KA                                    |  |
| <b>Protection</b>                          |  |  |
| Tripping Type                              | Thermal Magnetic Type                    |  |
| <b>Control And Indication</b>              |  |  |
| Shunt Release (SHT)                        | Optional                                 | N/A                                    |
| Interphase Barriers                        | Yes                                      |  |
| <b>Service Life/Cycle Operation</b>        |  |  |
| Mechanical                                 | 10000                                    |  |
| Electrical                                 | 2000                                     |  |
| Size (L x W x H)                           | 150.5x64.5x119mm                         | 164.5x79.5x118mm                       |
| Ingress Protection                         | All Sides IP40, Connection Terminal IP20 |  |
| <b>Installation Environment</b>            |  |  |
| Comply With                                | IEC60947-2/GB14048.2                     |  |
| Storage Temperature                        | -40°C~+85°C                              |  |
| Wire size (min.-max.)                      | 16mm <sup>2</sup> - 50mm <sup>2</sup>    | 50mm <sup>2</sup> - 120mm <sup>2</sup> |



**Characteristic Curve**



| Type                  | BDM-125 | BDM-250 |
|-----------------------|---------|---------|
| Picture               |         |         |
| Contacts Wiring graph |         |         |

**Dimensions(mm)**

| BDM-125                               | BDM-250                               |
|---------------------------------------|---------------------------------------|
|                                       |                                       |
| IP65 Waterproof Enclosure for BDM-125 | IP65 Waterproof Enclosure for BDM-250 |
|                                       |                                       |

**BUD-40/2  
PV DC Surge  
Protection Device**



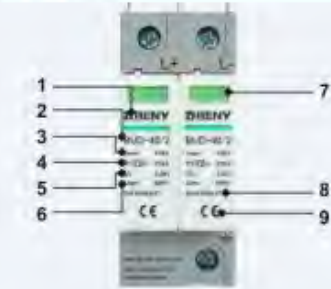
- 1 Brand
- 2 Type
- 3 Max. Discharge Current  $I_{max}$
- 4 Nominal Discharge Current  $I_n$
- 5 Voltage Protection Level  $U_p$
- 6 Max. Continuous Operating Voltage  $U_{cpv}$
- 7 Indicator
- 8 Standard Code
- 9 Certificate Symbol

- Suitable For Use in All Photovoltaic Systems
- Prewired Modular Complete Unit, Consisting of A Base Part and Plug-in Protection Modules
- Plug-in Protection Module, Easily Installation and Maintainance
- High Energy Varistor, Response Time Less Than 25 Nanosecond
- Optional Remote Signalling Contact(FM) for Monitoring Device (Floating Changeover Contact)
- Din Rail Mounting TH35-7.5/DIN35
- Comply with :EN 61643-31

**Application**

**ZBENY** PV DC BUD-40/2 Surge Protection Device was designed and manufactured, complying the PV standard EN61643-31. It widely used in PV DC combiner box, inverter, controller and PV DC cabinet. Rated voltage 600V DC, Maximum discharge current 40KA, High Energy Varistor, high effective for lightning protection.

**Appearance Introduction**



**Type Instruction**

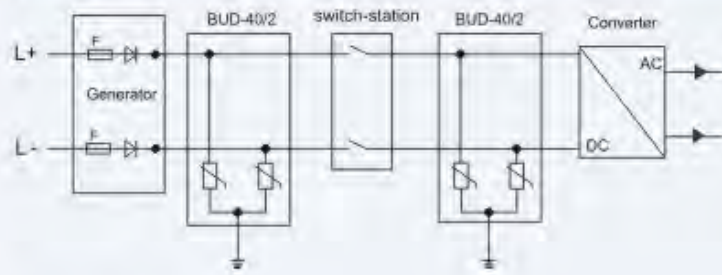
|                               |   |                        |   |      |               |  |
|-------------------------------|---|------------------------|---|------|---------------|--|
| BUD                           | - | 40                     | / | 2    | 600V          | RC   |
| Product code                  |   | Max. discharge current |   | Pole | Rated Voltage | With Remote signalling contact                             |
| PV DC Surge Protection Device |   | 40KA                   |   | 2P   | 600V          | RC: With Remote signalling contact<br>Non: Without contact |

**Parameter**

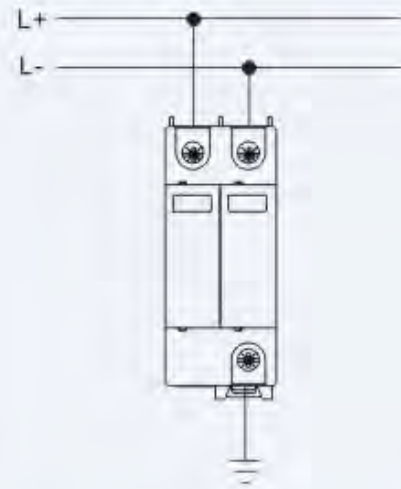
| PV DC BUD-40/2 Surge Protection Device |                                |                |
|--|--------------------------------|----------------|
| Pole                                   | 2P                             |                |
| Standard                               | EN 61643-31                    |                |
| Electrical Characteristics             |                                |                |
| Category IEC/EN                        | IEC II/EN2                     |                |
| Open Voltage                           | $U_{oc}$ Max 600V DC           |                |
| Max Continuous Operational Voltage     | $U_{cpv}$ 600V DC              |                |
| Nominal Discharge Current              | $I_n(8/20)\mu s$ 20KA          |                |
| Maximum Discharge Current              | $I_{max}(8/20)\mu s$ 40KA      |                |
| Voltage Protection Level               | $U_p$ $\leq 2.0$ KV            |                |
| Response Time                          | $\leq 25$ ns                   |                |
| Control and Indication                 |                                |                |
| Operating State/fault Indication       | Green/Red                      |                |
| Plug-in Protection Module              |                                |                |
| Remote Signalling Contact(Optional)    | Max. Working Voltage(V) 30V DC |                |
|  | Max. Working Current 1A        |                |
| Connection and Installation            |                                |                |
| Wire                                   | Hard cable mm <sup>2</sup>     | 4~25           |
|  | Flexible cable mm <sup>2</sup> | 4~16           |
| Terminal Screws                        |                                | M5             |
| Torque(Nm)                             | Main Circuit                   | 2.5            |
|  | Remote Contact                 | 0.25           |
| Degree of Protection                   |                                | IP20           |
| Installation Environment               |                                |                |
| Operating Temperature Range (TU)       |                                | -40°C~+80°C    |
| For Mounting on                        |                                | TH35-7.5/DIN35 |
| Relative Humidity                      |                                | 30%~90%        |
| Weight kg                              |                                | 0.24           |



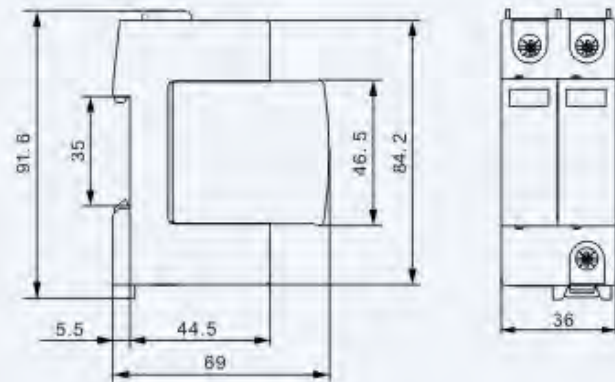
**Principal Drawing**



**Wiring Method**



**Dimensions(mm)**



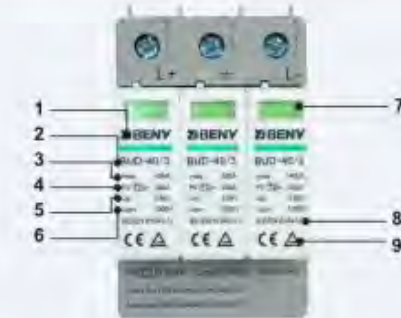
- 1 Brand
- 2 Type
- 3 Max. Discharge Current  $I_{max}$
- 4 Nominal Discharge Current  $I_n$
- 5 Voltage Protection Level  $U_p$
- 6 Max. Continuous Operating Voltage  $U_{cpv}$
- 7 Indicator
- 8 Standard Code
- 9 Certificate Symbol

- Suitable For Use in All Photovoltaic Systems
- Prewired Modular Complete Unit, Consisting of A Base Part and Plug-in Protection Modules
- Plug-in Protection Module, Easily Installation and Maintainance
- High Energy Varistor, Response Time Less Than 25 Nanosecond
- Optional Remote Signalling Contact(FM) for Monitoring Device (Floating Changeover Contact)
- Din Rail Mounting TH35-7.5/DIN35
- Comply with :IEC/EN 61643-31

**Application**

**ZBENY** PV DC BUD-40/3 Surge Protection Device was designed and manufactured, complying the PV standard IEC/EN 61643-31. It widely used in PV DC combiner box, inverter, controller and PV DC cabinet. Rated voltage 1000V DC, Maximum discharge current 40KA, High Energy Varistor, high effective for lightning protection.

**Appearance Introduction**



**Type Instruction**

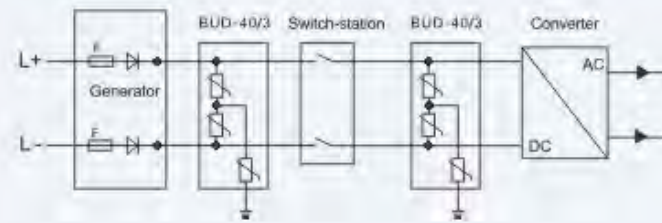
|                               |   |                        |   |      |               |  |
|-------------------------------|---|------------------------|---|------|---------------|--|
| BUD                           | - | 40                     | / | 3    | 1000V         | RC   |
| Product code                  |   | Max. discharge current |   | Pole | Rated Voltage | With Remote signalling contact                             |
| PV DC Surge Protection Device |   | 40KA                   |   | 3P   | 1000V         | RC: With Remote signalling contact<br>Non: Without contact |

**Parameter**

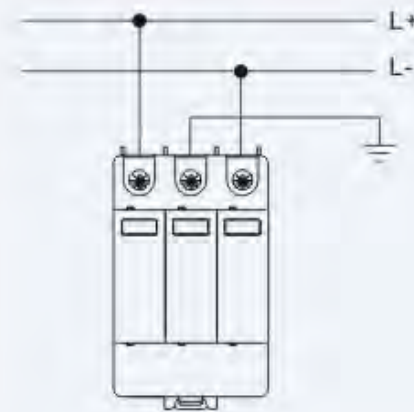
| PV DC BUD-40/3 Surge Protection Device |                                |                 |
|--|--------------------------------|-----------------|
| Pole                                   |                                | 3P              |
| Standard                               |                                | IEC/EN 61643-31 |
| Electrical Characteristics             |                                |                 |
| Category IEC/EN                        |                                | IEC II/EN2      |
| Open Voltage                           | $U_{oc}$ Max                   | 1000V DC        |
| Max Continuous Operational Voltage     | $U_c$                          | 1000V DC        |
| Nominal Discharge Current              | $I_n(8/20)\mu s$               | 20KA            |
| Maximum Discharge Current              | $I_{max}(8/20)\mu s$           | 40KA            |
| Voltage Protection Level               | $U_p$                          | $\leq 3.8KV$    |
| Response Time                          |                                | $\leq 25ns$     |
| Control and Indication                 |                                |                 |
| Operating State/fault Indication       |                                | Green/Red       |
| Plug-in Protection Module              |                                | ■               |
| Remote Signalling Contact(Optional)    | Max. Working Voltage(V)        | 30V DC          |
|  | Max. Working Current           | 1A              |
| Connection and Installation            |                                |                 |
| Wire                                   | Hard cable mm <sup>2</sup>     | 4~25            |
|  | Flexible cable mm <sup>2</sup> | 4~16            |
| Terminal Screws                        |                                | M5              |
| Torque(Nm)                             | Main Circuit                   | 2.5             |
|  | Remote Contact                 | 0.25            |
| Degree of Protection                   |                                | IP20            |
| Installation Environment               |                                |                 |
| Operating Temperature Range (TU)       |                                | -40°C~+80°C     |
| For Mounting on                        |                                | TH35-7.5/DIN35  |
| Relative Humidity                      |                                | 30%~90%         |
| Weight kg                              |                                | 0.36            |



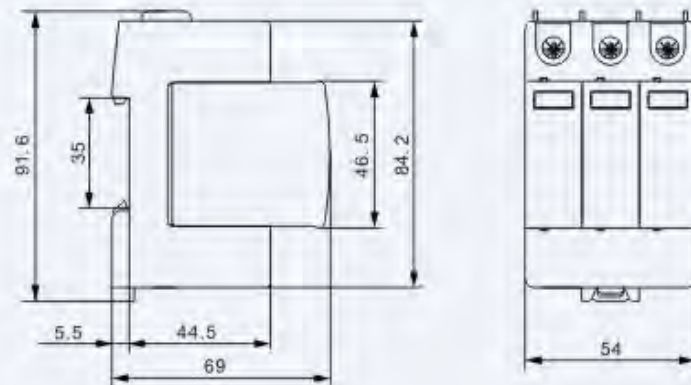
**Principal Drawing**



**Wiring Method**



**Dimensions(mm)**



- 1 Brand
- 2 Type
- 3 Max. Discharge Current  $I_{max}$
- 4 Nominal Discharge Current  $I_n$
- 5 Voltage Protection Level  $U_p$
- 6 Max. Continuous Operating Voltage  $U_{cav}$
- 7 Indicator
- 8 Standard Code
- 9 Certificate Symbol

- Suitable For Use in All Photovoltaic Systems
- Prewired Modular Complete Unit, Consisting of A Base Part and Plug-in Protection Modules
- Plug-in Protection Module, Easily Installation and Maintainance
- High Energy Varistor, Response Time Less Than 25 Nanosecond
- Optional Remote Signalling Contact(FM) for Monitoring Device (Floating Changeover Contact)
- Din Rail Mounting TH35-7.5/DIN35
- Comply with :IEC/EN 61643-31/UL 1449

**Application**

**ZBENY** PV DC BUD-40/3 Surge Protection Device was designed and manufactured, complying the PV standard IEC/EN 61643-31/UL1449. It widely used in PV DC combiner box, inverter, controller and PV DC cabinet. Rated voltage 1000V DC, Maximum discharge current 40KA,High Energy Varistor, high effective for lightning protection.

**Appearance Introduction**



**Type Instruction**

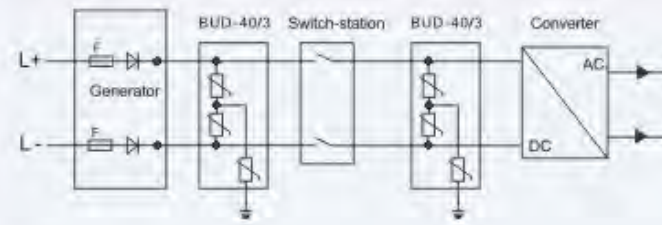
|                               |   |                        |   |      |  |               |  |  |
|-------------------------------|---|------------------------|---|------|--|---------------|--|--|
| BUD                           | - | 40                     | / | 3    |  | 1000V         |  | RC   |
| Product code                  |   | Max. discharge current |   | Pole |  | Rated Voltage |  | With Remote signalling contact                             |
| PV DC Surge Protection Device |   | 40KA                   |   | 3P   |  | 1000V         |  | RC: With Remote signalling contact<br>Non: Without contact |

**Parameter**

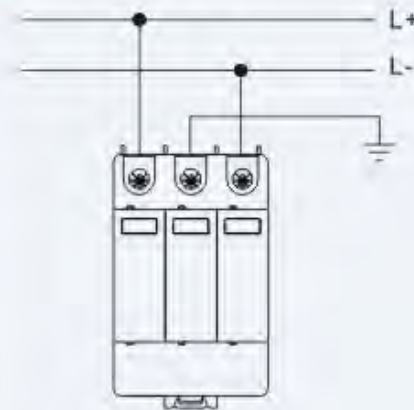
| PV DC BUD-40/3 Surge Protection Device |                                |                         |
|--|--------------------------------|-------------------------|
| Pole                                   |                                | 3P                      |
| Standard                               |                                | IEC/EN 61643-31/UL 1449 |
| Electrical Characteristics             |                                |                         |
| Category IEC/EN                        |                                | IEC II/EN2              |
| Open Voltage                           | $U_{oc}$ Max                   | 1000V DC                |
| Max Continuous Operational Voltage     | $U_c$                          | 1000V DC                |
| Nominal Discharge Current              | $I_n(8/20)\mu s$               | 20KA                    |
| Maximum Discharge Current              | $I_{max}(8/20)\mu s$           | 40KA                    |
| Voltage Protection Level               | $U_p$                          | $\leq 3.8KV$            |
| Response Time                          |                                | $\leq 25ns$             |
| Control and Indication                 |                                |                         |
| Operating State/fault Indication       |                                | Green/Red               |
| Plug-in Protection Module              |                                |                         |
| Remote Signalling Contact(Optional)    | Max. Working Voltage(V)        | 30V DC                  |
|  | Max. Working Current           | 1A                      |
| Connection and Installation            |                                |                         |
| Wire                                   | Hard cable mm <sup>2</sup>     | 4-25                    |
|  | Flexible cable mm <sup>2</sup> | 4-16                    |
| Terminal Screws                        |                                | M5                      |
| Torque(Nm)                             | Main Circuit                   | 2.5                     |
|  | Remote Contact                 | 0.25                    |
| Degree of Protection                   |                                | IP20                    |
| Installation Environment               |                                |                         |
| Operating Temperature Range (TU)       |                                | -40°C~+80°C             |
| For Mounting on                        |                                | TH35-7.5/DIN35          |
| Relative Humidity                      |                                | 30%~90%                 |
| Weight kg                              |                                | 0.36                    |



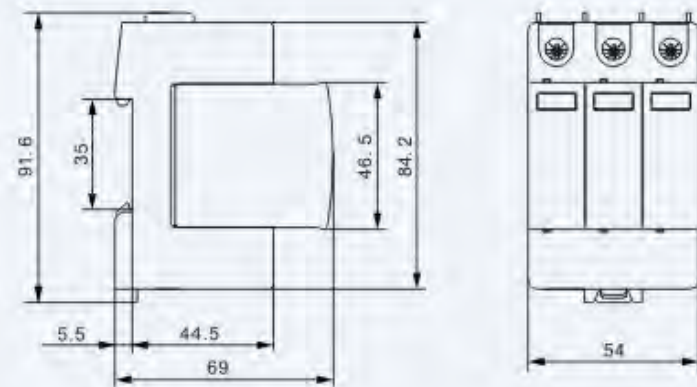
**Principal Drawing**



**Wiring Method**



**Dimensions(mm)**



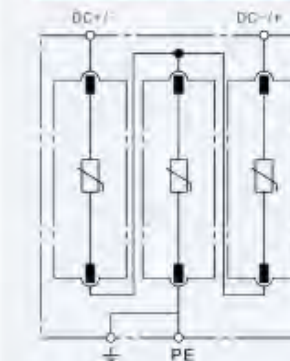
**Application**

ZBENY Developed and manufactured 1500V surge protector, in line with IEC/EN 616143-31, with a maximum continuous operating voltage of 1500V; High pressure Sensitive resistor, nanosecond response speed, high efficiency to prevent lightning voltage damage to photovoltaic power generation system.

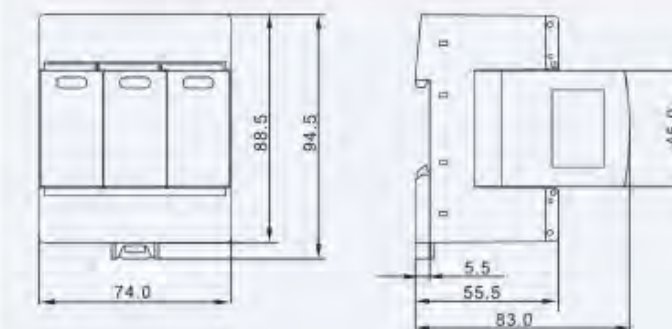
**Parameter**

| Type   | BUD-1500  |
|--|---|
| Test standard  | IEC/EN 61643-31                                       |
| Type   | T2  |
| Max. PV voltage( $U_{cprv}$ )                        | 1500V   |
| Short-circuit current rating( $I_{scprv}$ )          | 10kA  |
| Total discharge current (8/20 $\mu$ s) ( $I_{ttd}$ ) | 40kA  |
| Nominal discharge current(8/20 $\mu$ s)( $I_n$ )     | 20kA  |
| Voltage protection level ( $U_p$ )                   | 6kV   |
| Response time( $t_r$ )                               | $\leq 25$ ns  |
| Operating temperature range( $T_o$ )                 | -40°C~+80°C   |
| Operating state/fault indication                     | green/red   |
| Number of ports                                      | 1   |
| Cross-sectional area(min.)                           | 1.5mm <sup>2</sup> solid/ flexible                    |
| Cross-sectional area(max.)                           | 35mm <sup>2</sup> stranded/25mm <sup>2</sup> flexible |
| For mounting on                                      | TH35-7.5/DIN35  |
| Place of installation                                | indoor installation                                   |
| Degree of protection                                 | IP20  |
| Approvals  | TUV,CE  |

**Principal Drawing**



**Dimensions(mm)**







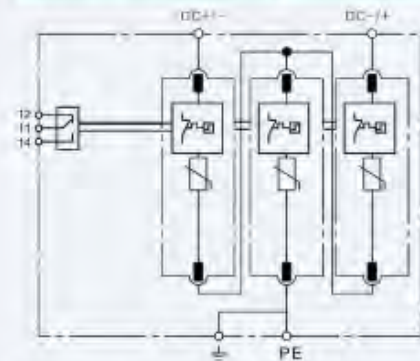
**Application**

**ZBENY** Developed and manufactured 1500V surge protector, in line with IEC/EN 616143-31, with a maximum continuous operating voltage of 1500V; High pressure Sensitive resistor, nanosecond response speed, high efficiency to prevent lightning voltage damage to photovoltaic power generation system.

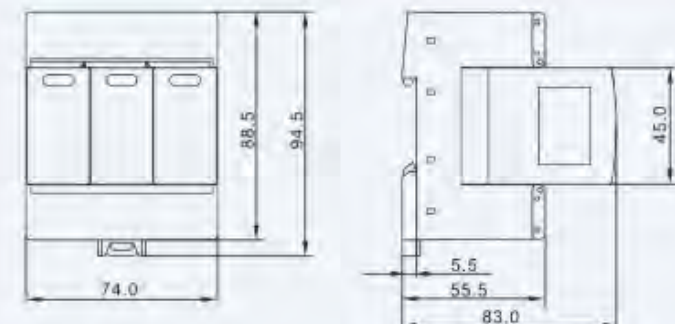
**Parameter**

| Type  | BUD-1500 R  |
|---|---|
| Test standard   | IEC/EN 61643-31                                       |
| Type  | T2  |
| Max.PV voltage( $U_{CPV}$ )                             | 1500V   |
| Short-circuit current rating( $I_{SCPV}$ )              | 10kA  |
| Total discharge current ( 8/20 $\mu$ s ) ( $I_{Tmax}$ ) | 40kA  |
| Nominal discharge current(8/20 $\mu$ s)( $I_n$ )        | 20kA  |
| Voltage protection level ( $U_p$ )                      | 6kV   |
| Response time( $t_r$ )                                  | $\leq 25$ ns  |
| Operating temperature range( $T_o$ )                    | -40°C~+80°C   |
| Operating state/fault indication                        | green/red   |
| Number of ports   | 1   |
| Cross-sectional area(min.)                              | 1.5mm <sup>2</sup> solid/ flexible                    |
| Cross-sectional area(max.)                              | 35mm <sup>2</sup> stranded/25mm <sup>2</sup> flexible |
| For mounting on   | TH35-7.5/DIN35  |
| Place of installation                                   | indoor installation                                   |
| Degree of protection                                    | IP20  |
| Approvals   | TUV,CE  |

**Principal Drawing**



**Dimensions(mm)**



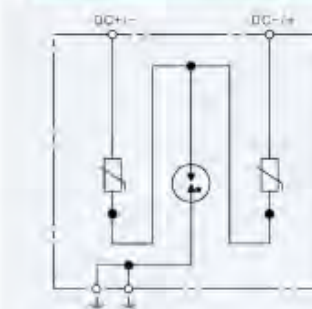
**Application**

**ZBENY** Developed and manufactured the T1+T2 complex surge protector, in line with IEC/EN 616143-31, with a maximum continuous operating voltage of 1000V; High pressure Sensitive resistor, nanosecond response speed, high efficiency to prevent lightning voltage damage to photovoltaic power generation system.

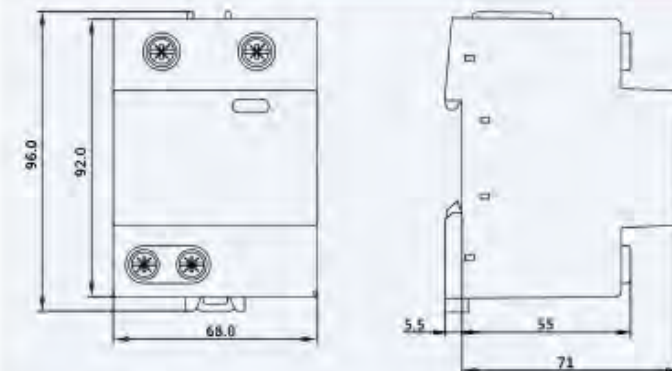
**Parameter**

| Type   | BUD-S1000   |
|--|---|
| Test standard  | IEC/EN 61643-31                                       |
| EN Type  | T1+T2   |
| Max.PV voltage(DC+ $\rightarrow$ DC-)( $U_{CPV}$ )                                     | $\leq 1000$ V   |
| Max.PV voltage(DC+/DC $\rightarrow$ PE)( $U_{CPV}$ )                                   | $\leq 725$ V  |
| Short-circuit current rating( $I_{SCPV}$ )   | 2kA   |
| Total discharge current ( 8/20 $\mu$ s ) ( DC+/DC $\rightarrow$ PE ) ( $I_{Tmax}$ )    | 30kA  |
| Total discharge current ( 10/350 $\mu$ s ) ( DC+/DC $\rightarrow$ PE ) ( $I_{Tmax}$ )  | 12.5kA  |
| Nominal discharge current(8/20 $\mu$ s)( $I_n$ )                                       | 15kA  |
| Lightning impulse current ( 10/350 $\mu$ s ) ( DC+/DC $\rightarrow$ PE ) ( $I_{imp}$ ) | 6.25kA  |
| Voltage protection level ( DC+/DC $\rightarrow$ PE ) ( $U_p$ )                         | 2.5kV   |
| Voltage protection level(DC+ $\rightarrow$ DC- ) ( $U_p$ )                             | 4.75kV  |
| Response time( $t_r$ )   | $\leq 25$ ns  |
| Operating temperature range( $T_o$ )   | -40°C~+80°C   |
| Operating state/fault indication   | green/red   |
| Number of ports  | 1   |
| Cross-sectional area(min.)   | 1.5mm <sup>2</sup> solid/ flexible                    |
| Cross-sectional area(max.)   | 35mm <sup>2</sup> stranded/25mm <sup>2</sup> flexible |
| For mounting on  | TH35-7.5/DIN35  |
| Place of installation  | indoor installation                                   |
| Degree of protection   | IP20  |
| Approvals  | TUV,CE  |

**Principal Drawing**



**Dimensions(mm)**



Surge Protection Device





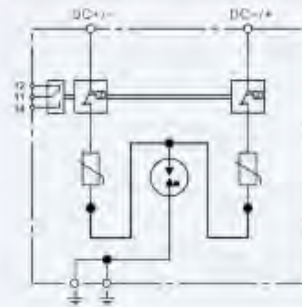
**Application**

**ZBENY** Developed and manufactured the T1+T2 complex surge protector, in line with IEC/EN 61643-31, with a maximum continuous operating voltage of 1000V; High pressure Sensitive resistor, nanosecond response speed, high efficiency to prevent lightning voltage damage to photovoltaic power generation system.

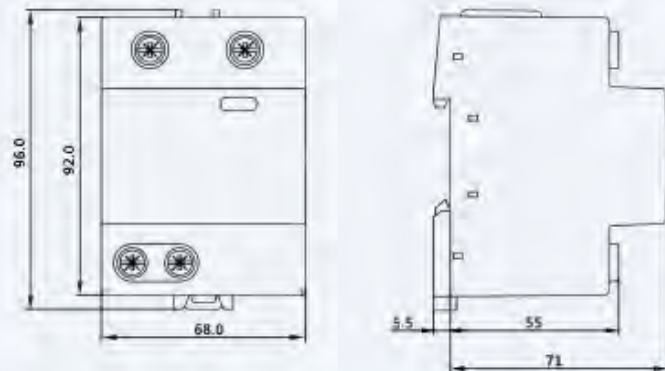
**Parameter**

| Type  | BUD-S1000 R   |
|---|---|
| Test standard   | IEC/EN 61643-31                                       |
| EN Type   | T1+T2   |
| Max.PV voltage(DC+→DC-)( $U_{cpv}$ )                                      | ≤1000V  |
| Max.PV voltage(DC+/DC-→PE)( $U_{cpv}$ )                                   | ≤725V   |
| Short-circuit current rating( $I_{scpv}$ )                                | 2kA   |
| Total discharge current ( 8/20 $\mu$ s ) ( DC+/DC-→PE ) ( $I_{tmax}$ )    | 30kA  |
| Total discharge current ( 10/350 $\mu$ s ) ( DC+/DC-→PE ) ( $I_{tmax}$ )  | 12.5kA  |
| Nominal discharge current(8/20 $\mu$ s)( $I_n$ )                          | 15kA  |
| Lightning impulse current ( 10/350 $\mu$ s ) ( DC+/DC-→PE ) ( $I_{imp}$ ) | 6.25kA  |
| Voltage protection level ( DC+/DC-→PE ) ( $U_p$ )                         | 2.5kV   |
| Voltage protection level(DC+→DC- ) ( $U_p$ )                              | 4.75kV  |
| Response time( $t_r$ )  | ≤25ns   |
| Operating temperature range( $T_o$ )                                      | -40°C~+80°C   |
| Operating state/fault indication  | green/red   |
| Number of ports   | 1   |
| Cross-sectional area(min.)  | 1.5mm <sup>2</sup> solid/ flexible                    |
| Cross-sectional area(max.)  | 35mm <sup>2</sup> stranded/25mm <sup>2</sup> flexible |
| For mounting on   | TH35-7.5/DIN35  |
| Place of installation   | indoor installation                                   |
| Degree of protection  | IP20  |
| Approvals   | TUV,CE  |

**Principal Drawing**



**Dimensions(mm)**



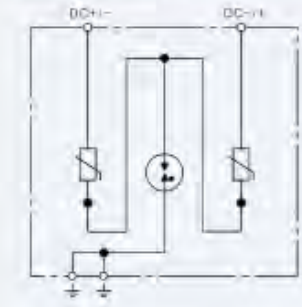
**Application**

**ZBENY** Developed and manufactured the T1+T2 complex surge protector, in line with IEC/EN 61643-31, with a maximum continuous operating voltage of 1500V; High pressure Sensitive resistor, nanosecond response speed, high efficiency to prevent lightning voltage damage to photovoltaic power generation system.

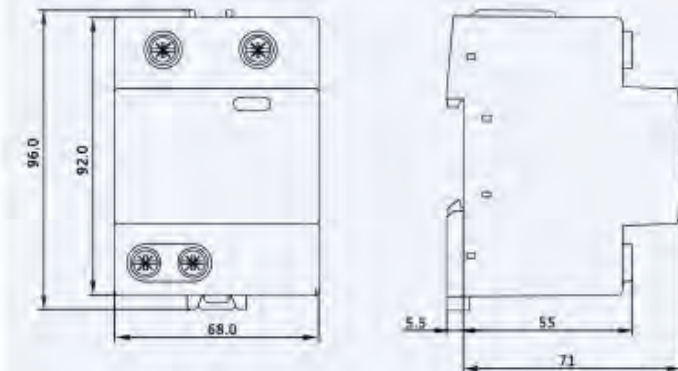
**Parameter**

| Type  | BUD-S1500   |
|---|---|
| Test standard   | IEC/EN 61643-31                                       |
| EN Type   | T1+T2   |
| Max.PV voltage(DC+→DC-)( $U_{cpv}$ )                                      | ≤1500V  |
| Max.PV voltage(DC+/DC-→PE)( $U_{cpv}$ )                                   | ≤1100V  |
| Short-circuit current rating( $I_{scpv}$ )                                | 2kA   |
| Total discharge current ( 8/20 $\mu$ s ) ( DC+/DC-→PE ) ( $I_{tmax}$ )    | 30kA  |
| Total discharge current ( 10/350 $\mu$ s ) ( DC+/DC-→PE ) ( $I_{tmax}$ )  | 12.5kA  |
| Nominal discharge current(8/20 $\mu$ s)( $I_n$ )                          | 15kA  |
| Lightning impulse current ( 10/350 $\mu$ s ) ( DC+/DC-→PE ) ( $I_{imp}$ ) | 6.25kA  |
| Voltage protection level ( DC+/DC-→PE ) ( $U_p$ )                         | 3.75kV  |
| Voltage protection level(DC+→DC- ) ( $U_p$ )                              | 7.25kV  |
| Response time( $t_r$ )  | ≤25ns   |
| Operating temperature range( $T_o$ )                                      | -40°C~+80°C   |
| Operating state/fault indication  | green/red   |
| Number of ports   | 1   |
| Cross-sectional area(min.)  | 1.5mm <sup>2</sup> solid/ flexible                    |
| Cross-sectional area(max.)  | 35mm <sup>2</sup> stranded/25mm <sup>2</sup> flexible |
| For mounting on   | TH35-7.5/DIN35  |
| Place of installation   | indoor installation                                   |
| Degree of protection  | IP20  |
| Approvals   | TUV,CE  |

**Principal Drawing**



**Dimensions(mm)**



Surge Protection Devices





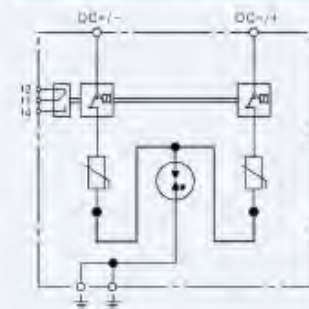
**Application**

ZBENY Developed and manufactured the T1+T2 complex surge protector, in line with IEC/EN 61643-31, with a maximum continuous operating voltage of 1500V; High pressure Sensitive resistor, nanosecond response speed, high efficiency to prevent lightning voltage damage to photovoltaic power generation system.

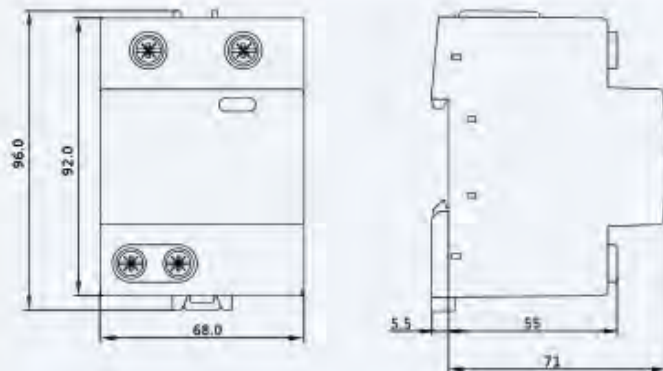
**Parameter**

| Type  | BUD-S1500 R   |
|---|---|
| Test standard   | IEC/EN 61643-31                                       |
| EN Type   | T1+T2   |
| Max. PV voltage(DC+→DC-)( $U_{cvt}$ )                                     | ≤1500V  |
| Max. PV voltage(DC+/DC-→PE)( $U_{cvt}$ )                                  | ≤1100V  |
| Short-circuit current rating( $I_{sc}$ )                                  | 2kA   |
| Total discharge current ( 8/20 $\mu$ s ) ( DC+/DC-→PE ) ( $I_{max}$ )     | 30kA  |
| Total discharge current ( 10/350 $\mu$ s ) ( DC+/DC-→PE ) ( $I_{max}$ )   | 12.5kA  |
| Nominal discharge current(8/20 $\mu$ s)( $I_n$ )                          | 15kA  |
| Lightning impulse current ( 10/350 $\mu$ s ) ( DC+/DC-→PE ) ( $I_{imp}$ ) | 6.25kA  |
| Voltage protection level ( DC+/DC-→PE ) ( $U_p$ )                         | 3.75kV  |
| Voltage protection level(DC+→DC- ) ( $U_p$ )                              | 7.25kV  |
| Response time( $t_r$ )  | ≤25ns   |
| Operating temperature range( $T_o$ )                                      | -40°C~+80°C   |
| Operating state/fault indication  | green/red   |
| Number of ports   | 1   |
| Cross-sectional area(min.)  | 1.5mm <sup>2</sup> solid/ flexible                    |
| Cross-sectional area(max.)  | 35mm <sup>2</sup> stranded/25mm <sup>2</sup> flexible |
| For mounting on   | TH35-7.5/DIN35  |
| Place of installation   | indoor installation                                   |
| Degree of protection  | IP20  |
| Approvals   | TUV,CE  |

**Principal Drawing**



**Dimensions(mm)**



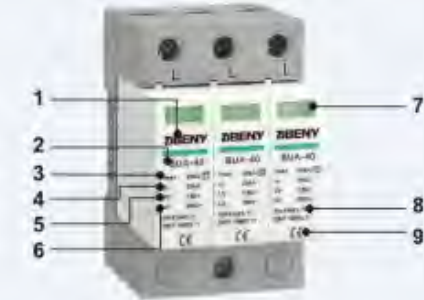
**BUA-40  
Surge Protection  
Device**



**Application**

ZBENY BUA-40 Surge Protection Device was designed and manufactured, complying standard GB/T 18802.11/EN 61643-11, Rated voltage 385V, Maximum discharge current 40KA.High Energy Varistor, high effective for lightning protection.

**Appearance Introduction**



- 1 Brand
- 2 Type
- 3 Max. Discharge Current  $I_{max}$
- 4 Nominal Discharge Current  $I_n$
- 5 Voltage Protection Level  $U_p$
- 6 Max. Continuous Operating Voltage  $U_{cvt}$
- 7 Indicator
- 8 Standard Code
- 9 Certificate Symbol

- Prewired Modular Complete Unit, Consisting of A Base Part and Plug-in Protection Modules
- Plug-in Protection Module, Easily Installation and Maintainance
- High Energy Varistor, Response Time Less Than 25 Nanosecond
- Optional Remote Signalling Contact(FM) for Monitoring Device (Floating Changeover Contact)
- Din Rail Mounting TH35-7.5/DIN35



**Type Instruction**

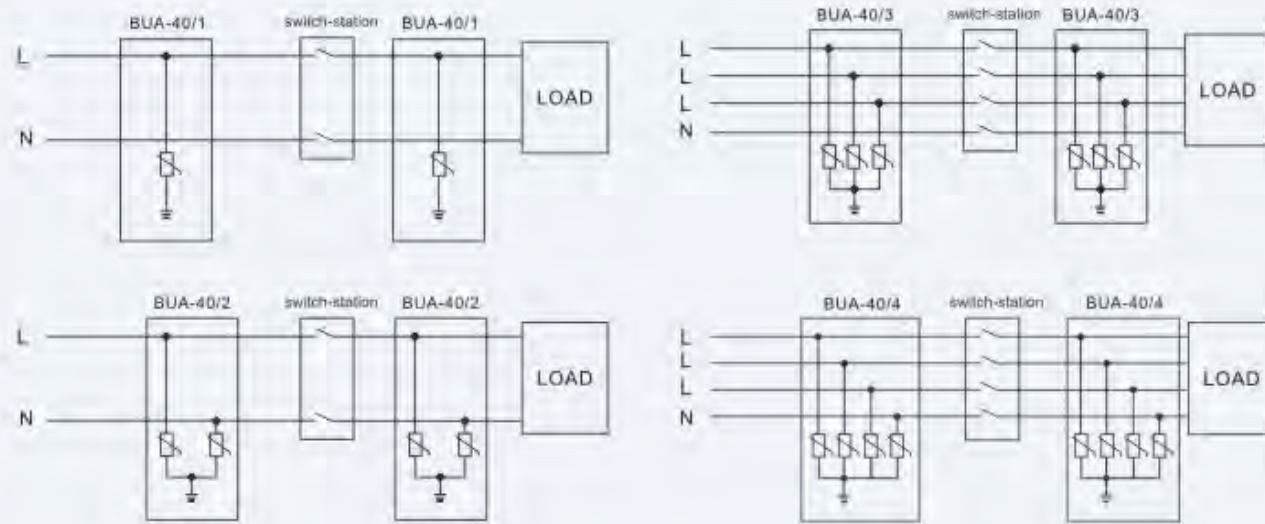


**Parameter**

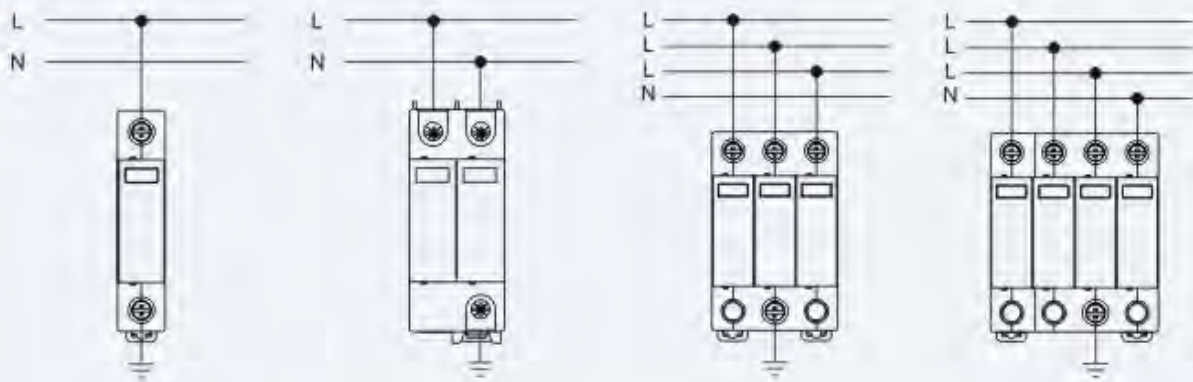
| BUA-40 Surge Protection Device                 |  |
|--|--|
| Pole   | 1P/2P/3P/4P  |
| Standard                                       | GB/T 18802.11/EN 61643-11  |
| Electrical Characteristics                     |  |
| Category IEC/EN                                | IEC II/EN2   |
| Max Continuous Operational Voltage $U_c$       | 385V AC  |
| Nominal Discharge Current $I_n(8/20)\mu s$     | 20KA   |
| Maximum Discharge Current $I_{max}(8/20)\mu s$ | 40KA   |
| Voltage Protection Level $U_p$                 | ≤1.8KV   |
| Response Time                                  | ≤25ns  |
| Control and Indication                         |  |
| Operating State/fault Indication               | Green/Red  |
| Plug-in Protection Module                      |  |
| Remote Signalling Contact(Optional)            | Max. Working Voltage(V) 30V DC<br>Max. Working Current 1A              |
| Connection and Installation                    |  |
| Wire   | Hard cable mm <sup>2</sup> 4~25<br>Flexible cable mm <sup>2</sup> 4~16 |
| Terminal Screws                                | M5   |
| Torque(Nm)                                     | Main Circuit 2.5<br>Remote Contact 0.25                                |
| Degree of Protection                           | IP20   |
| Installation Environment                       |  |
| Operating Temperature Range (TU)               | -40°C~+80°C  |
| For Mounting on                                | TH35-7.5/DIN35   |
| Relative Humidity                              | 30%~90%  |



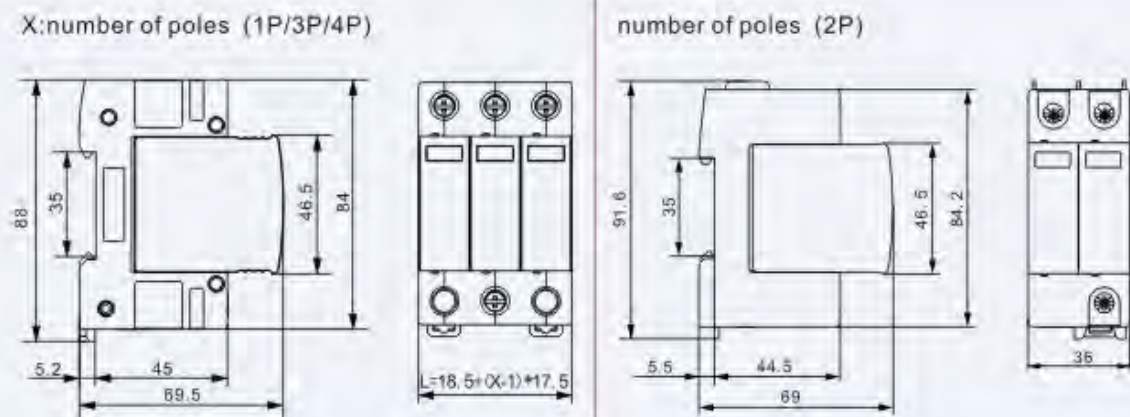
**Principal Drawing**



**Wiring Method**



**Dimensions(mm)**



**BYA-63 Series  
Weatherproof AC  
Isolating Switch**



**Technical Parameter:**

- Conform to IEC60947-3
- Rated Current: 20A, 35A, 63A
- Rated Voltage: 250 / 440VAC
- No. of Pole: 1P, 2P, 3P
- EESS Approved

**Terminal Capacity:**

- 25mm<sup>2</sup> Rigid stranded cable
- Conduit entry:
- 2x25mm<sup>2</sup> cable entry top and bottom.
- 2x25mm<sup>2</sup> conduit adaptors provided.
- 4x20mm<sup>2</sup>, 2x25mm<sup>2</sup> knockouts for rear cable entry.



**Application**

**ZBENY** The BYA series of weatherproof isolating switches is a robust range of switches suitable for virtually any external application included in the range are single, double, three and four poles switch from 20A to 63A, the base mounted mechanism provides for easier wiring and more wiring room.

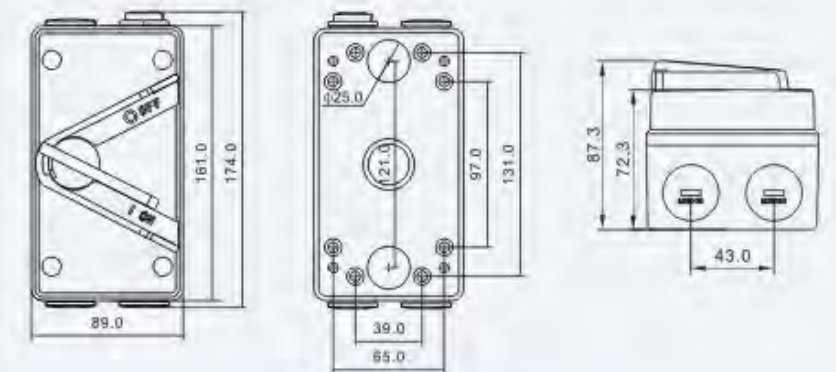
**Parameter**

| Designation                     | BYA-63                           |                  |        |
|---------------------------------|----------------------------------|------------------|--------|
| Pole                            | 1P                               | 2P               | 3P     |
| Rated Voltage                   | 250VAC                           | 250VAC           | 440VAC |
| Rated Current                   | 20A                              | 20A              | 20A    |
|                                 | 35A                              | 35A              | 35A    |
|                                 | 63A                              | 63A              | 63A    |
| Rated Frequency                 | 50Hz                             |                  |        |
| Reted Insulation Voltage        | Ui                               | 1000V            |        |
| Rated Impulse Withstand Voltage | Uimp                             | 2.5kV            |        |
| Rated Duty                      | Un-interrupted                   |                  |        |
| Short Term Withstand Current    | Icw                              | 1.2kA For 1Sound |        |
| Short Circuit Making Capacity   | Icm                              | 1.95kA           |        |
| Switch Rating                   | AC-22A(According to IEC 60947-3) |                  |        |

**Wiring Diagram**

| Contacts Wiring Diagram | 250V              | 440V              | Poles in series | Type Number | IP Rating | Weight/ pcs |
|-------------------------|-------------------|-------------------|-----------------|-------------|-----------|-------------|
|                         | 20A<br>35A<br>63A |                   | Single pole     | BYA-63      | IP66      | 0.41kgs     |
|                         | 20A<br>35A<br>63A |                   | Two poles       | BYA-63      | IP66      | 0.45kgs     |
|                         |                   | 20A<br>35A<br>63A | Three poles     | BYA-63      | IP66      | 0.47kgs     |

**Dimensions(mm)**







Technical Parameter:

- Conform to IEC60947-3
- Rated Current: 20A, 25A, 32A
- Rated Voltage: 230~440VAC
- No. of Pole:3P, 4P
- EESS Approved

**Application**

**ZBENY** The BYAF series of weatherproof isolating switches is a robust range of switches suitable for virtually any external application included in the range are three and four poles switch from 20A to 32A,the base mounted mechanism provides for easier wiring and more wiring room.

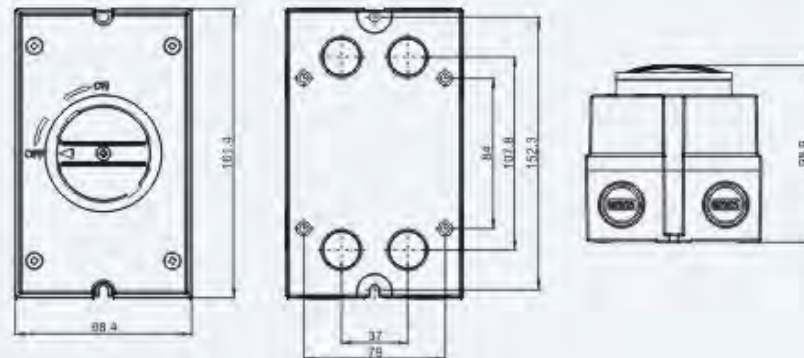
**Parameter**

| Designation                     |      | BYAF-32                          |            |
|---------------------------------|------|----------------------------------|------------|
| Pole                            |      | 3P                               | 4P         |
| Rated Voltage                   |      | 230~440VAC                       | 230~440VAC |
| Rated Current                   |      | 20A                              | 20A        |
|                                 |      | 25A                              | 25A        |
|                                 |      | 32A                              | 32A        |
| Rated Frequency                 |      | 50Hz                             |            |
| Reted Insulation Voltage        | Ui   | 1000V                            |            |
| Rated Impulse Withstand Voltage | Uimp | 2.5kV                            |            |
| Rated Duty                      |      | Un-interrupted                   |            |
| Short Tom Withstand Current     | Icw  | 750 A For 1Sound                 |            |
| Short Circuit Making Capacity   | Icm  | 1.98kA                           |            |
| Switch Rating                   |      | AC-21A(According to IEC 60947-3) |            |

**Wiring Diagram**

| Contacts Wiring Diagram | 230~440V          | Poles in series | Type Number | IP Rating | Weight / pcs |
|-------------------------|-------------------|-----------------|-------------|-----------|--------------|
|                         | 20A<br>25A<br>32A | Three poles     | BYAF-32     | IP65      | 0.50kgs      |
|                         | 20A<br>25A<br>32A | Four poles      | BYAF-32     | IP65      | 0.54kgs      |

**Dimensions(mm)**



Technical Parameter:

- Conform to IEC60947-3
- Rated Current: 40A, 63A
- Rated Voltage: 230~440VAC
- No. of Pole:3P, 4P
- EESS Approved

**Application**

**ZBENY** The BYAF series of weatherproof isolating switches is a robust range of switches suitable for virtually any external application included in the range are three and four poles switch from 40A to 63A,the base mounted mechanism provides for easier wiring and more wiring room.

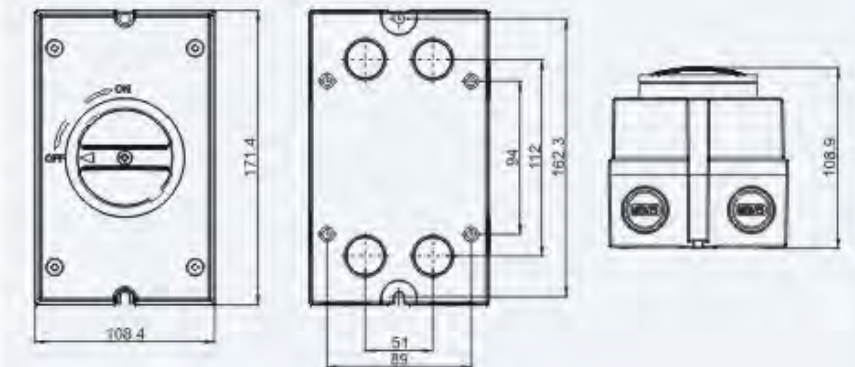
**Parameter**

| Designation                     |      | BYAF-63                          |            |
|---------------------------------|------|----------------------------------|------------|
| Pole                            |      | 3P                               | 4P         |
| Rated Voltage                   |      | 230~440VAC                       | 230~440VAC |
| Rated Current                   |      | 40A                              | 40A        |
|                                 |      | 63A                              | 63A        |
|                                 |      |                                  |            |
| Rated Frequency                 |      | 50Hz                             |            |
| Reted Insulation Voltage        | Ui   | 1000V                            |            |
| Rated Impulse Withstand Voltage | Uimp | 2.5kV                            |            |
| Rated Duty                      |      | Un-interrupted                   |            |
| Short Tom Withstand Current     | Icw  | 750 A For 1Sound                 |            |
| Short Circuit Making Capacity   | Icm  | 1.98kA                           |            |
| Switch Rating                   |      | AC-21A(According to IEC 60947-3) |            |

**Wiring Diagram**

| Contacts Wiring Diagram | 230~440V   | Poles in series | Type Number | IP Rating | Weight / pcs |
|-------------------------|------------|-----------------|-------------|-----------|--------------|
|                         | 40A<br>63A | Three poles     | BYAF-63     | IP65      | 0.61kgs      |
|                         | 40A<br>63A | Four poles      | BYAF-63     | IP65      | 0.67kgs      |

**Dimensions(mm)**







- High capacity, High reliability, Low energy-loss;
- Panel mounting and Easy installation;
- IP66 for mounting on panel;
- Max working voltage 1000V AC;
- Standard: IEC 60947-3; UL 508;
- Ambient Temperature: -40°C~+70°C;
- UL, TUV, CE certificates ;

**Application**

**ZBENY** BYAF-125 AC isolating switch is mainly used for AC rated frequency 50Hz/60Hz, rated working voltage 1000V and below with rated working current up to 50A, used for AC side and ventilation of photovoltaic system Control switches for equipment, air conditioning and pump systems can also control small capacity AC motors.

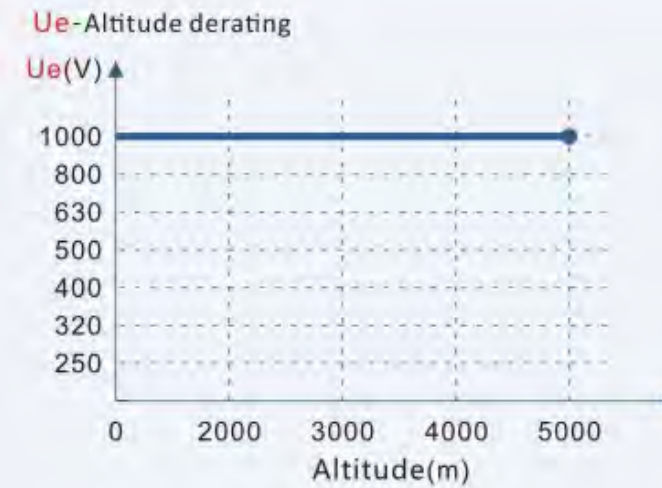
**Type Instruction**



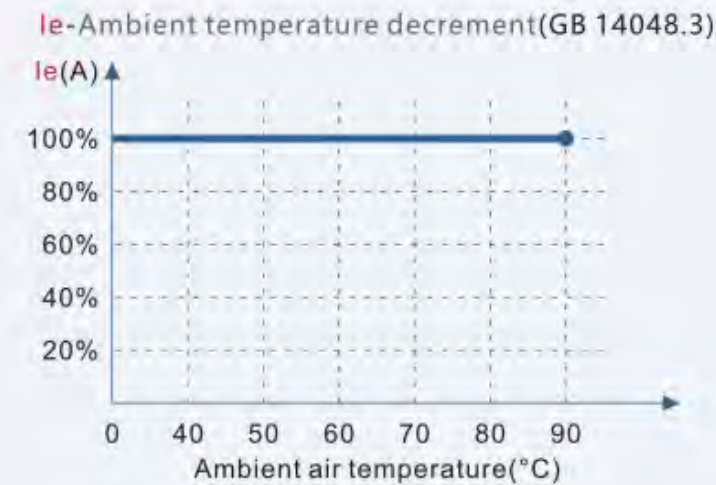
| Technical data   |                                 | Symbol Ratings   |     |     |     |     |     |      | Unit            |
|--|---------------------------------|--|-----|-----|-----|-----|-----|------|-----------------|
| According  | le / Ue<br>Utilization Category | 230  | 300 | 400 | 480 | 690 | 800 | 1000 | V a.c.          |
| IEC/EN 60947-3   | AC-23A                          | 50   | 50  | 50  | 50  | 50  | 50  | 50   | A a.c.          |
| UL 508   | 3-PH                            | 50   | 50  | 50  | 50  | 50  | 50  | 50   | A a.c.          |
| Rated frequency  |                                 | 50/60  |     |     |     |     |     |      | Hz              |
| Number of AC poles   |                                 | 3  |     |     |     |     |     |      |                 |
| Pollution degree   |                                 | 3  |     |     |     |     |     |      |                 |
| Tightening torque terminal screws M6 (min.-max.)                           |                                 | 3.5-4.0  |     |     |     |     |     |      | N·m             |
| Wire size (min.-max.)  |                                 | 8-1  |     |     |     |     |     |      | AWG             |
|  |                                 | 10-50  |     |     |     |     |     |      | mm <sup>2</sup> |
| Method of mounting   |                                 | panel mounting   |     |     |     |     |     |      |                 |
| Tightening torque (M5), used for surface panel (min.-max.)                 |                                 | 1.2-1.5  |     |     |     |     |     |      | N·m             |
| Tightening torque (ST4.2), used for rotary knob (min.-max.)                |                                 | 1.2-1.5  |     |     |     |     |     |      | N·m             |
| Positions (Adjust as required)   |                                 | 9 o'clock(OFF) and 12 o'clock (ON)<br>12 o'clock(OFF) and 9 o'clock (ON) |     |     |     |     |     |      |                 |
| Method of operation  |                                 | Independent manual operation   |     |     |     |     |     |      |                 |
| Rated impulse withstand voltage  | Uimp                            | 8.0  |     |     |     |     |     |      | kV              |
| Insulation voltage   | Ui                              | 1000   |     |     |     |     |     |      | V               |
| Rated short-time withstand current(1s)                                     | Icw                             | 1500   |     |     |     |     |     |      | A               |
| Rated short-circuit making capacity  | Icm                             | 2500   |     |     |     |     |     |      | A               |
| Allowed ambient temperature(min.-max.)                                     | Tambient                        | -40~+70  |     |     |     |     |     |      | °C              |
| Allowed storage temperature(min.-max.)                                     | Tstorage                        | -40~+85  |     |     |     |     |     |      | °C              |
| Relative humidity (max.), without condensation at 20°C                     | RH                              | 90   |     |     |     |     |     |      | %               |
| Enclosure type   |                                 | 4X   |     |     |     |     |     |      |                 |
| IP rating terminals  |                                 | IP 20  |     |     |     |     |     |      |                 |
| IP rating of the shaft in case of single hole and four hole panel mounting |                                 | IP 66  |     |     |     |     |     |      |                 |
| Weight   |                                 | 0.70   |     |     |     |     |     |      | kg              |



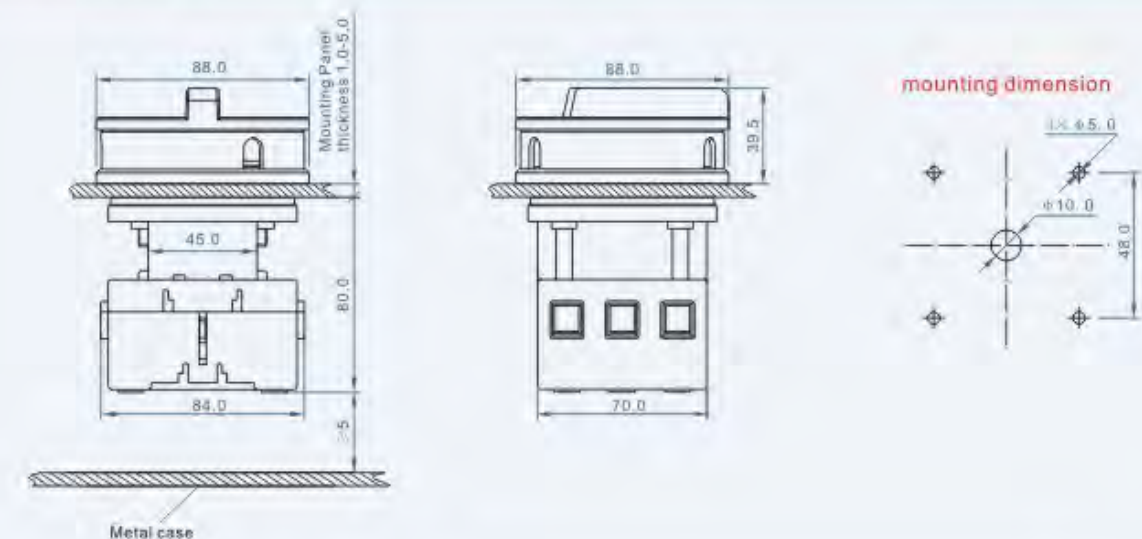
**Altitude derating**



**Ambient temperature decrement**



**Dimensions(mm)**







- High capacity, High reliability, Low energy-loss;
- Panel mounting and Easy installation;
- IP66 for mounting on panel;
- Max working voltage 1000V AC;
- Standard: IEC 60947-3; UL 508;
- Ambient Temperature: -40°C ~ +70°C;
- UL, TUV, CE certificates ;



| Auxiliary Contacts(EN60947-5-1)                  |         |     |     | Unit            |
|--|---------|-----|-----|-----------------|
| Ue   | 230     | 400 | 690 | V a.c.          |
| Ie   | 6       | 4   | 2   | A a.c.          |
| Ie@24V AC(UL 508)                                |         |     |     | 10 mA           |
| Utilization Category                             | AC-15   |     |     | V               |
| Ui   | 1000    |     |     | V               |
| Rated conditional short-circuit current          | 3000    |     |     | A               |
| Contact Form                                     | 1NO+1NC |     |     |                 |
| Tightening torque terminal screws M6 (min.-max.) | 0.6-1.0 |     |     | N·m             |
| Wire size (min.-max.)                            | 1-4     |     |     | mm <sup>2</sup> |

**Application**

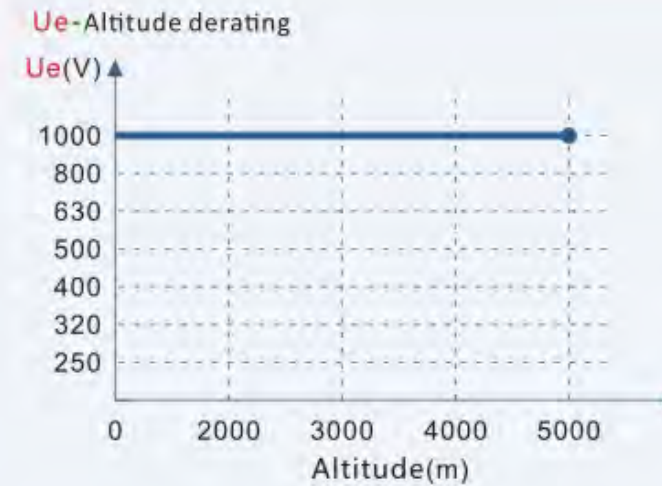
**ZBENY** BYAF-125 R AC isolating switch is mainly used for AC rated frequency 50Hz/60Hz, rated working voltage 1000V and below with rated working current up to 50A, used for AC side and ventilation of photovoltaic system Control switches for equipment, air conditioning and pump systems can also control small capacity AC motors.

**Type Instruction**

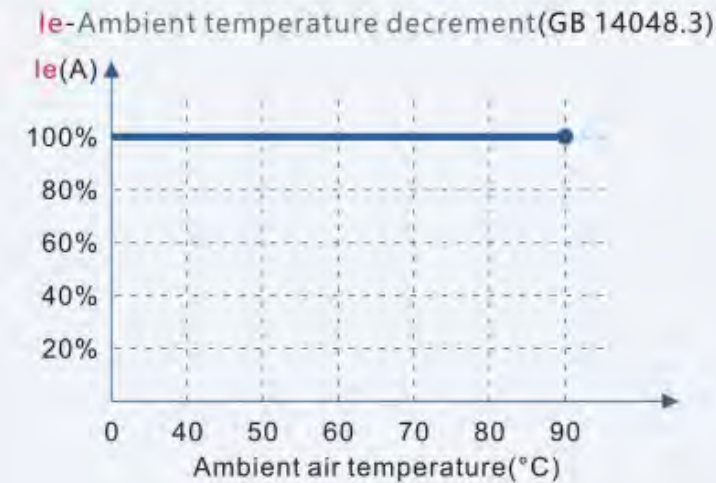


| Technical data   | Symbol                          | Rated Values   | Unit                   |
|--|---------------------------------|--|------------------------|
| According  | Ie / Ue<br>Utilization Category | 230 300 400 480 690 800 1000   | V a.c.                 |
| IEC/EN 60947-3   | AC-23A                          | 50 50 50 50 50   | A a.c.                 |
| UL 508   | 3-PH                            | 50 50 50   | A a.c.                 |
| Rated frequency  |                                 | 50/60  | Hz                     |
| Number of AC poles   |                                 | 3  |                        |
| Pollution degree   |                                 | 3  |                        |
| Tightening torque terminal screws M6 (min.-max.)                           |                                 | 3.5-4.0  | N·m                    |
| Wire size (min.-max.)  |                                 | 8-1<br>10-50   | AWG<br>mm <sup>2</sup> |
| Method of mounting   |                                 | panel mounting   |                        |
| Tightening torque (M5), used for surface panel (min.-max.)                 |                                 | 1.2-1.5  | N·m                    |
| Tightening torque (ST4.2), used for rotary knob (min.-max.)                |                                 | 1.2-1.5  | N·m                    |
| Positions (Adjust as required)   |                                 | 9 o'clock(OFF) and 12 o'clock (ON)<br>12 o'clock(OFF) and 9 o'clock (ON) |                        |
| Method of operation  |                                 | Independent manual operation   |                        |
| Rated impulse withstand voltage  | Uimp                            | 8.0  | kV                     |
| Insulation voltage   | Ui                              | 1000   | V                      |
| Rated short-time withstand current(1s)                                     | Icw                             | 1500   | A                      |
| Rated short-circuit making capacity  | Icm                             | 2500   | A                      |
| Allowed ambient temperature(min.-max.)                                     | Tambient                        | -40~+70  | °C                     |
| Allowed storage temperature(min.-max.)                                     | Tstorage                        | -40~+85  | °C                     |
| Relative humidity (max.) without condensation at 20°C                      | RH                              | 90   | %                      |
| Enclosure type   |                                 | 4X   |                        |
| IP rating terminals  |                                 | IP 20  |                        |
| IP rating of the shaft in case of single hole and four hole panel mounting |                                 | IP 66  |                        |
| Weight   |                                 | 0.72   | kg                     |

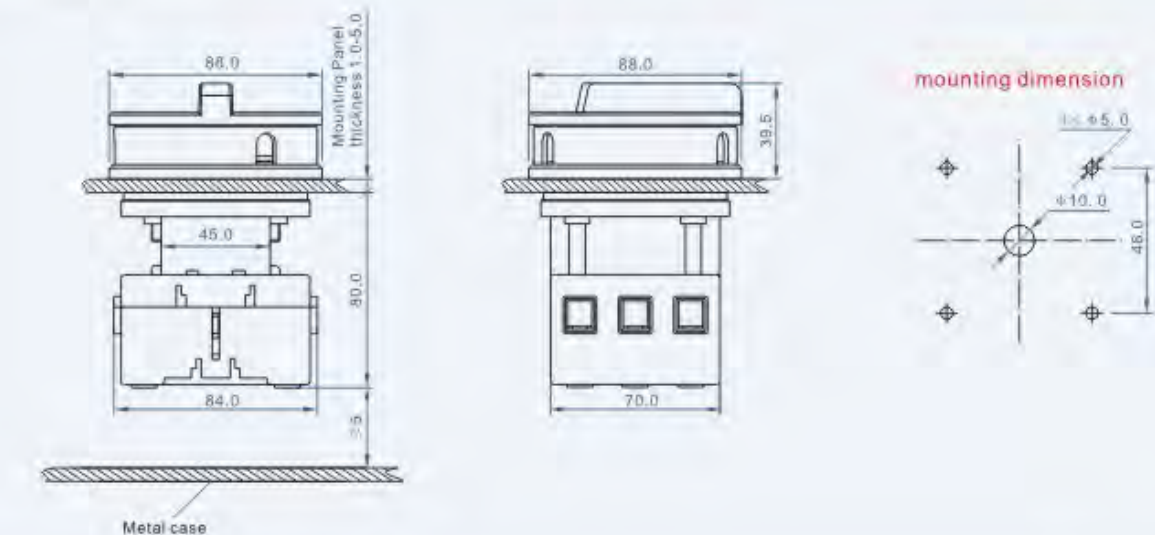
**Altitude derating**



**Ambient temperature decrement**



**Dimensions(mm)**





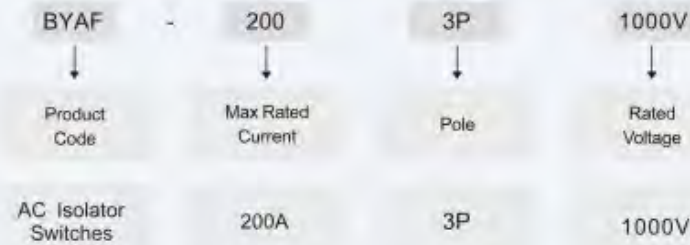


- High performance, reliability, low power loss;
- Easy Installation;
- Maximum Rated Current 200A;
- Maximum Rated Voltage 1000V
- GB/T 14048.3; IEC 60947-3; AS/NZS 60947.3:2015; UL 508

**Application**

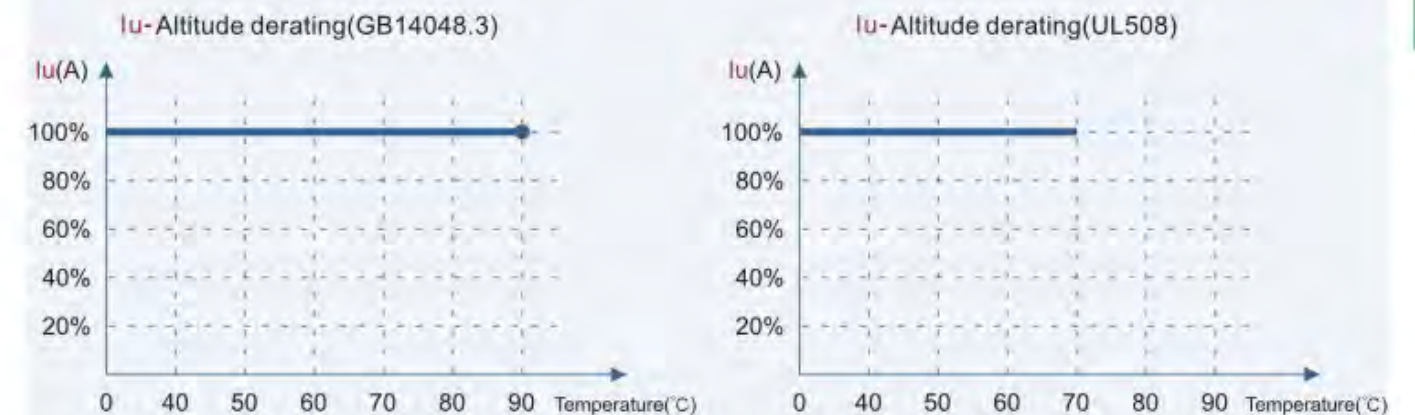
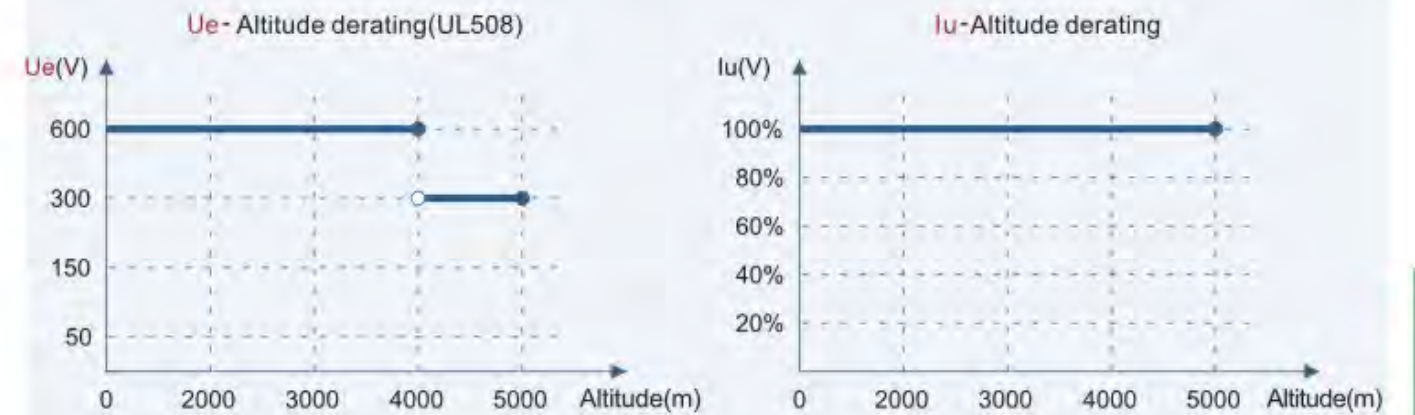
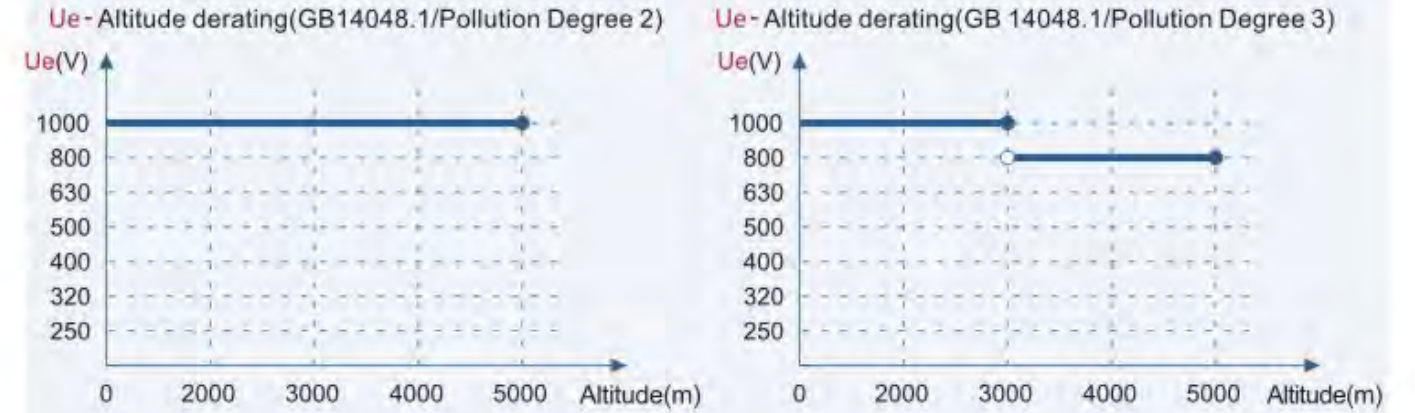
**ZBENY** BYAF-200 AC isolation switch is mainly used in the electrical circuit with rated ac frequency of 50Hz, rated working voltage of 1000V and below, and rated working current to 200A. It is used as the main switch of ac side of photovoltaic system, ventilation equipment, air conditioning and pump system, and can also control small-capacity ac motor.

**Type Instruction**

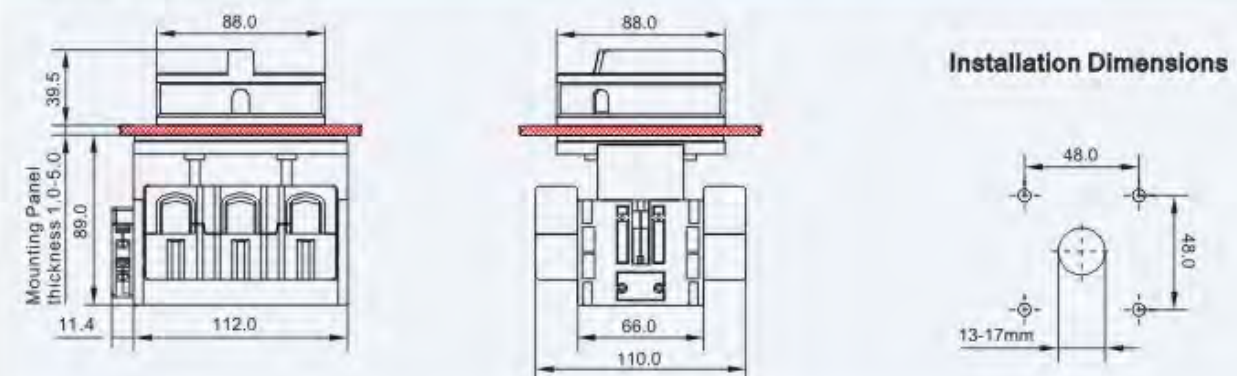


**Parameter**

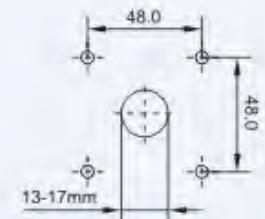
| Designation   |          | BYAF-200    |    |   |              |      |              |                 |
|---|----------|-------------|----|---|--------------|------|--------------|-----------------|
| Pole  |          | 3P          |    |   |              |      |              |                 |
| Standard  |          | Cat.        | Ue | 220V<br>240V                                  | 380V<br>440V | 500V | 660V<br>690V | 1000V           |
| IEC 60947-3   |          | Ith         |    | 200A  | 200A         | 200A | 200A         | 200A            |
| EN 60947-3  |          | AC-21A      |    | 200A  | 200A         | 200A | 200A         | 200A            |
| GB/T 14048.3  |          | AC-23A      |    | 125A  | 125A         | 125A | 125A         | 125A            |
| UL 508  |          | VOLTS -3 PH |    | 120V  | 240V         | 480V | 600V         | 1000V           |
|   |          | Ie          |    | 100A  | 100A         | 100A | 100A         | 100A            |
|   |          |             |    | GENERAL USE                                   |              |      |              | 150A 1000V A.C. |
| Rated frequency   |          |             |    | 50/60   |              |      |              | Hz              |
| Number of AC poles  |          |             |    | 3   |              |      |              |                 |
| Pollution degree  |          |             |    | 2   |              |      |              |                 |
| Tightening torque terminal screws M10 (min.-max.)                       |          |             |    | 8-10  |              |      |              | N.m.            |
| Wire size (min.-max.)   |          |             |    | ≤90   |              |      |              | mm <sup>2</sup> |
| Method of mounting  |          |             |    | panel mounting                                |              |      |              |                 |
| Positions   |          |             |    | 9 (OFF) and 12 o'clock (ON)                   |              |      |              |                 |
| Actuator  |          |             |    | Standard knob with long screw to fix in shaft |              |      |              |                 |
| Method of operation   |          |             |    | Independent manual operation                  |              |      |              |                 |
| Rated impulse withstand voltage   | Uimp     |             |    | 8   |              |      |              | kV              |
| Insulation voltage  | Ui       |             |    | 1000  |              |      |              | V               |
| Rated short-time withstand current(1s)                                  | Icw      |             |    | 2.5   |              |      |              | kA              |
| Rated short-circuit making capacity                                     | Icm      |             |    | 4   |              |      |              | kA              |
| Allowed ambient temperature(min.-max.)                                  | Tambient |             |    | -40~+70                                       |              |      |              | °C              |
| Allowed storage temperature(min.-max.)                                  | Tstorage |             |    | -40~+85                                       |              |      |              | °C              |
| Relative humidity (max.), without condensation at 20°C                  | RH       |             |    | 90  |              |      |              | %               |
| IP rating terminals   |          |             |    | IP 20   |              |      |              |                 |
| IP rating of the shaft in case single hole and four hold panel mounting |          |             |    | IP 65   |              |      |              |                 |
| Weight  |          |             |    | 1.25  |              |      |              | kg              |
| Auxiliary Contact   |          |             |    | Optional                                      |              |      |              |                 |



**Dimensions(mm)**



**Installation Dimensions**





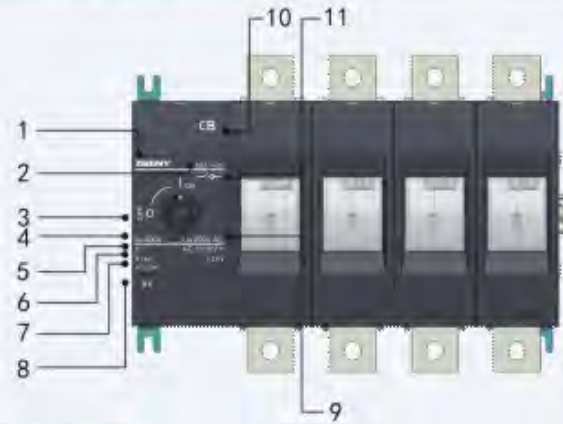
GB/T 14048.3

- 1 Brand
- 2 Model
- 3 On Off
- 4 Rated Current
- 5 Nominal Insulation Voltage
- 6 Rated Withstand Voltage
- 7 Utilization Category
- 8 Auxiliary Contact
- 9 Rated Voltage
- 10 Certificate Mark
- 11 Electrical Symbol

**Application**

**ZBENY** BHA-400 series ac disconnecting switches are suitable for ac 50/60hz, rated voltage 690V and below, rated current in 400A and below in the power system, the product can be switched on and off, play the role of isolating line to provide safety isolation guarantee for low-voltage circuit.

**Appearance Introduction**



**Type Instruction**

|                     |   |             |   |          |   |   |   |  |   |   |
|---------------------|---|-------------|---|----------|---|---|---|--|---|---|
| BHA                 | - | 400         | - | 4P       | - | 400A  | - | A  | - | A X   |
| Model               |   | Max Current |   | Pole     |   | Rated Current   |   | Assembling way   |   | Auxiliary contact   |
| AC Isolation Switch |   | 400A        |   | 3P<br>4P |   | <input type="checkbox"/> 250A<br><input type="checkbox"/> 320A<br><input type="checkbox"/> 400A |   | <input type="checkbox"/> A<br><input type="checkbox"/> B<br><input type="checkbox"/> C |   | <input type="checkbox"/> without<br><input type="checkbox"/> with |

**Parameter**

| Electrical Characteristics              |     |                        |
|---|-----|------------------------|
| Rated Working Voltage                   | Ue  | 690V                   |
| Rated Current                           | Ie  | 250A, 315A, 400A       |
| Utilization category AC                 |     | AC-21A, AC-22A, AC-23A |
| Rated insulation voltage                | Ui  | 1000V                  |
| Engagement free air heating current     | Ith | 400A                   |
| Rated impulse withstand voltage         | V   | 12kV                   |
| Rated short-time withstand current (1s) | Icw | 15kA                   |
| Rated short-circuit making capacity     | Icm | 65kA                   |
| Service life                            |     |                        |
| Electric Life                           |     | 1000                   |
| Mechanical Life                         |     | 8000                   |
| Service Environment                     |     |                        |
| Installation mode                       |     | Base screw mounting    |
| Screws for mounting(M5)                 |     | 2.00~3.00N.m           |
| Wiring Screw(M8)                        |     | 8.00~10.00N.m          |
| Ambient temperature allowed between     |     | -40°C ~ +85°C          |
| Storage temperature allowed between     |     | -40°C ~ +85°C          |
| Pollution degree                        |     | 3                      |
| Outside the ark handle                  |     | IP66                   |
| IP rating terminals                     |     | IP20                   |

**Wiring Graph**

| Model      | Wiring Graph | Rated Voltage | Class of use | rated current | Rated switching power |
|------------|--------------|---------------|--------------|---------------|-----------------------|
| BHA-400-3P |              | 415-690V      | AC-21A       | 250A          | 250kW                 |
|            | Example      |               | AC-22A       | 315A          | 315kW                 |
|            |              |               | AC-23A       | 400A          | 400kW                 |
| BHA-400-4P |              | 415-690V      | AC-21A       | 250A          | 250kW                 |
|            | Example      |               | AC-22A       | 315A          | 315kW                 |
|            |              |               | AC-23A       | 400A          | 400kW                 |

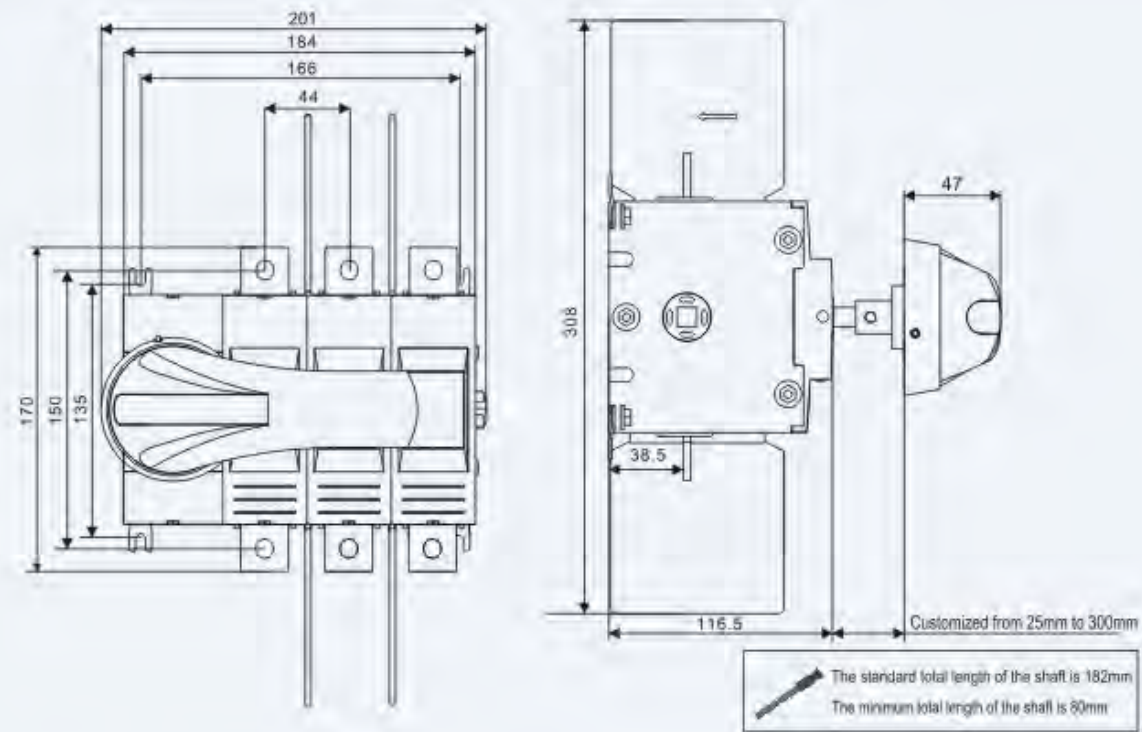
**Product Selection**

| Model      | Category |   |   |
|------------|----------|---|---|
|            | A        | B | C |
| BHA-400-3P |          |   |   |
| BHA-400-4P |          |   |   |

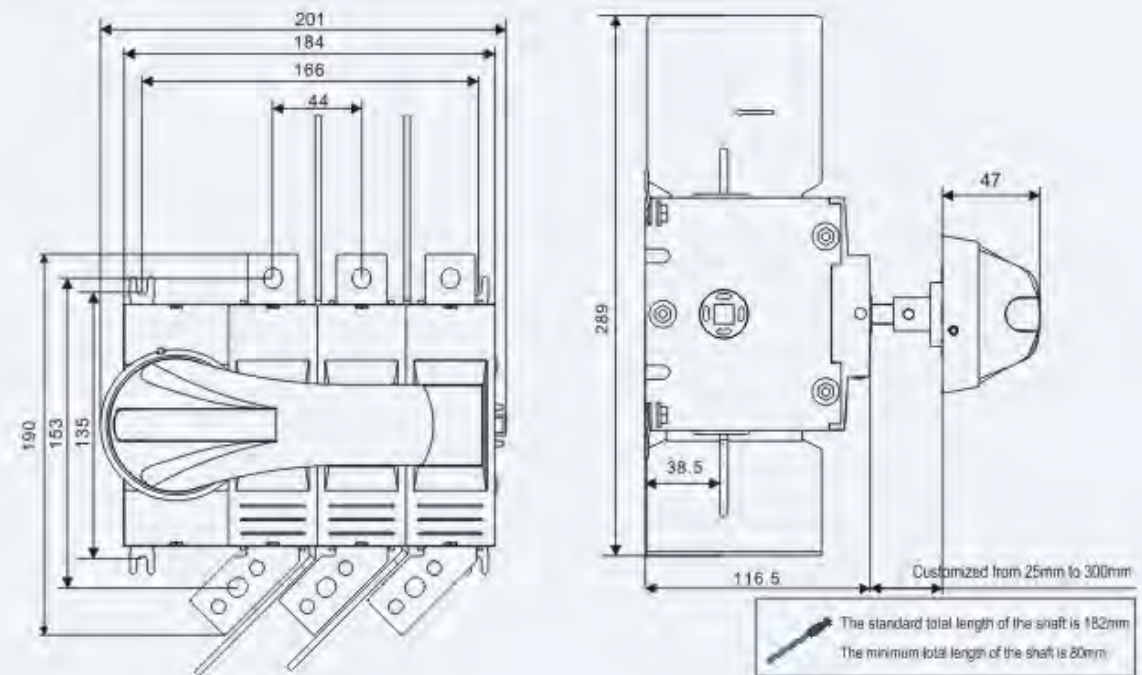


Dimensions(mm)

BHA-400-3P-A

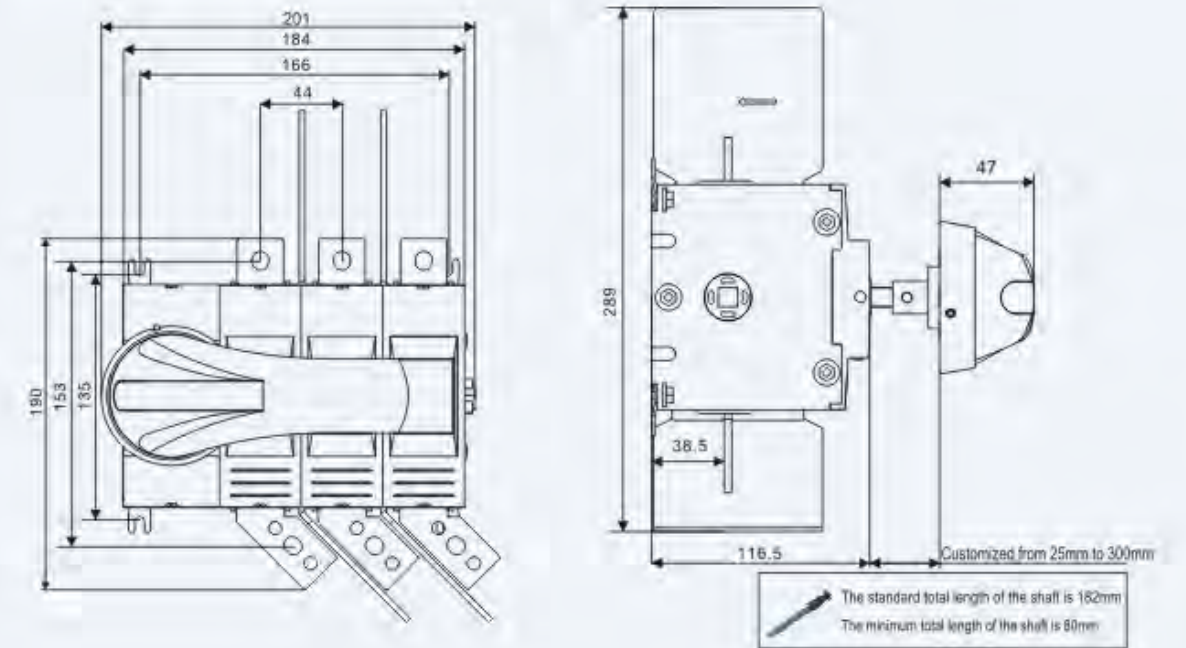


BHA-400-3P-B

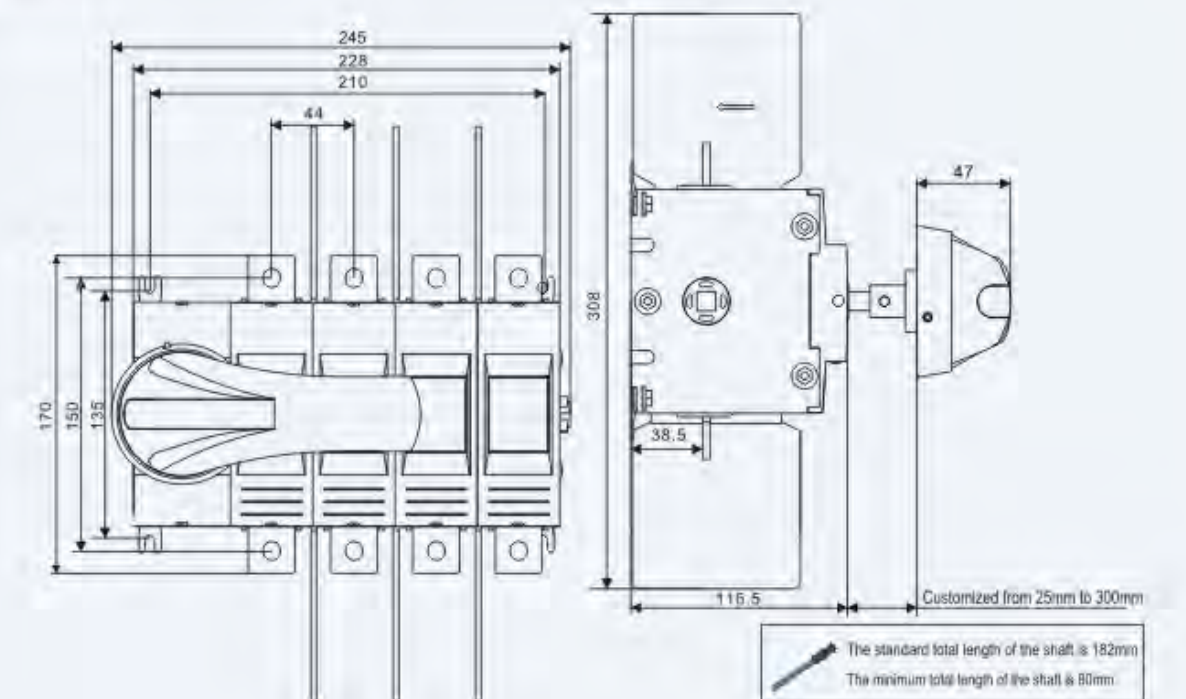


Dimensions(mm)

BHA-400-3P-C



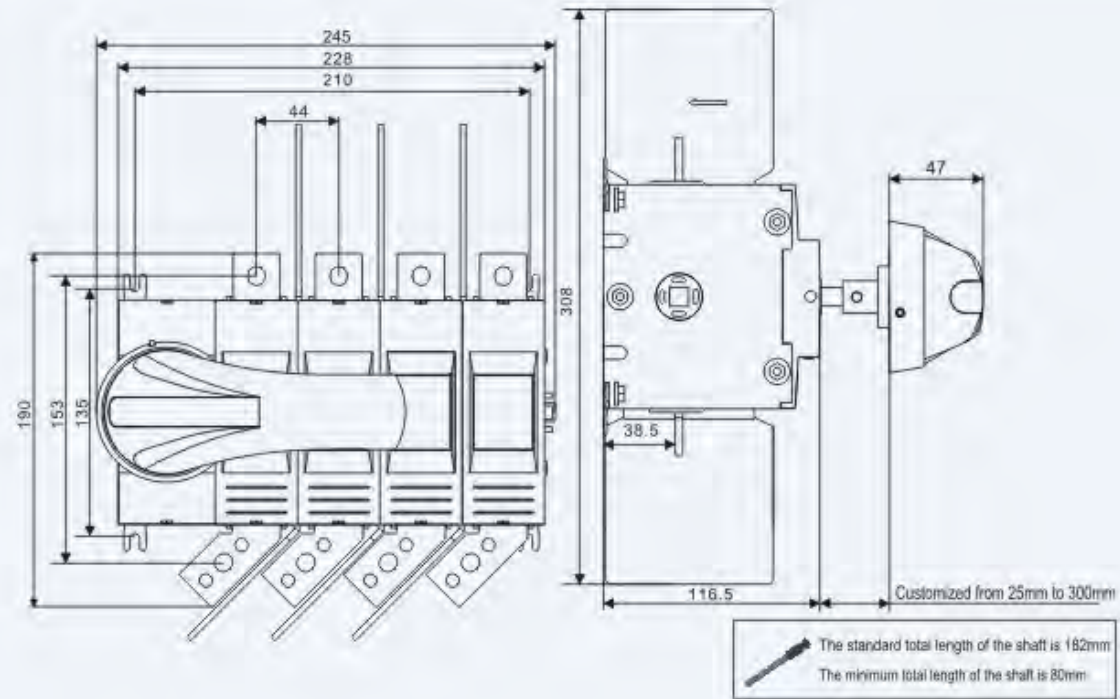
BHA-400-4P-A



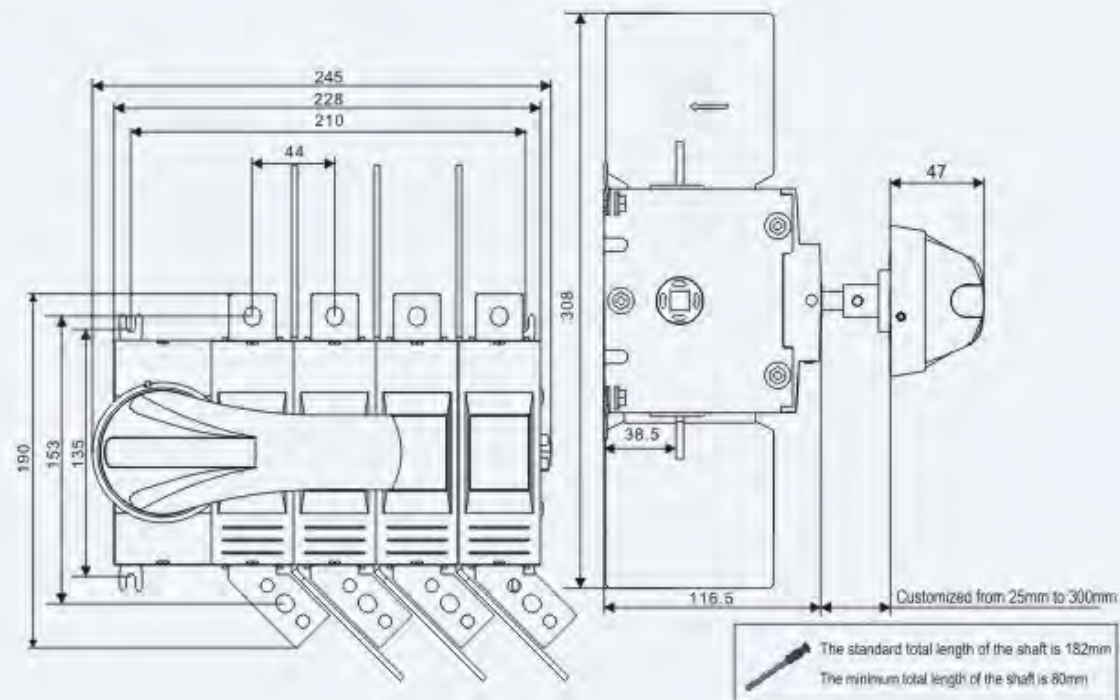


Dimensions(mm)

BHA-400-4P-B

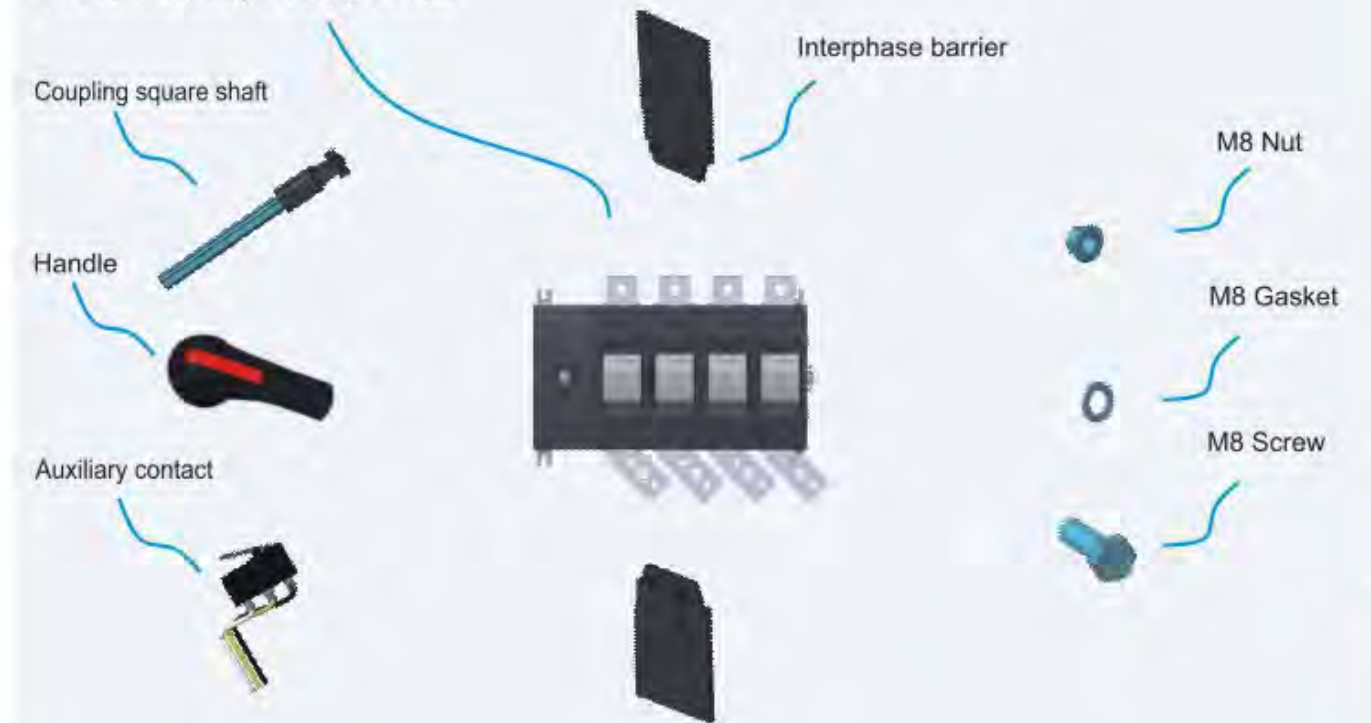


BHA-400-4P-C



Switches and accessories

Front and side operable products



Accessory

| Name                   | The attachment list  |
|------------------------|--|
| standard configuration | <input checked="" type="checkbox"/> Handle   |
|                        | <input checked="" type="checkbox"/> Coupling square shaft (The standard length is 182mm) |
|                        | <input checked="" type="checkbox"/> Interphase barrier                                   |
|                        | <input checked="" type="checkbox"/> M8 Binding kits                                      |
| apolegamy              | <input checked="" type="checkbox"/> Specification  |
|                        | <input type="checkbox"/> Auxiliary contact   |
|                        | <input type="checkbox"/> Coupling square shaft Custom length ____mm                      |



**Derating data**

**Derating Temperature**

| Tem     |         | -40°C ~ +55°C | +60°C | +65°C | +70°C | +75°C | +80°C |
|---------|---------|---------------|-------|-------|-------|-------|-------|
| Type    | Current |               |       |       |       |       |       |
| BHA-400 | 400A    | 400A          | 392A  | 380A  | 368A  | 360A  | 352A  |

**Derating Altitude**

| Altitude                          | 2000m   | 3000m   | 4000m   | 5000m   |
|-----------------------------------|---------|---------|---------|---------|
| Power frequency withstand voltage | 1890VDC | 1890VDC | 1890VDC | 1890VDC |
| Isolation voltage                 | 690VDC  | 690VDC  | 690VDC  | 690VDC  |
| Working current                   | 400A    | 400A    | 380A    | 368A    |
| Working voltage                   | N / A   |         |         |         |

**Installation and use**

The connecting conductor shall be copper conductor or equivalent copper row. The sectional area shall be selected according to the table.

| Rated current(A)                                       | 250A               | 320A               | 400A               |
|--|--------------------|--------------------|--------------------|
| The area of a wire or copper conductor mm <sup>2</sup> | 120mm <sup>2</sup> | 185mm <sup>2</sup> | 240mm <sup>2</sup> |

**BR-30  
PV DC Fuse Holder**



- 1 Brand
- 2 Type
- 3 Rated Current
- 4 Rated Voltage
- 5 Fuse Size
- 6 Electrical Diagram
- 7 Status Indicator

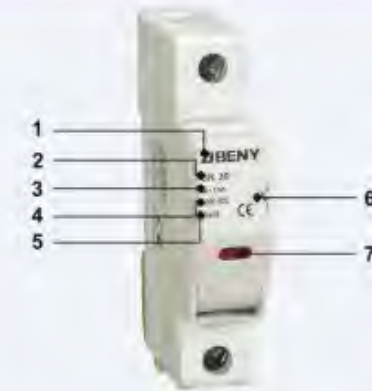
- Photovoltaic Applications
- Max Breaking Capacity up to 20KA, Effective Protection
- The Innovation Replacing Fuse Link Touch-safe
- Led Indicator, Reminding Fuse Link Replacement
- Be Suit for 10x38mm Fuse Size
- Comply with :IEC6094-3



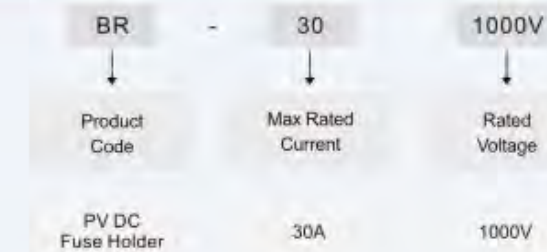
**Application**

**ZBENY** PV DC BR-30 Fuse Holder was designed and manufactured , complying with the standard IEC60947-3. The Rated Current up to 30A, rated voltage up to 1000V DC. It applied for PV DC combiner box, inverter etc, with the main function of over-current protection and effective disconnection.

**Appearance Introduction**



**Type Instruction**



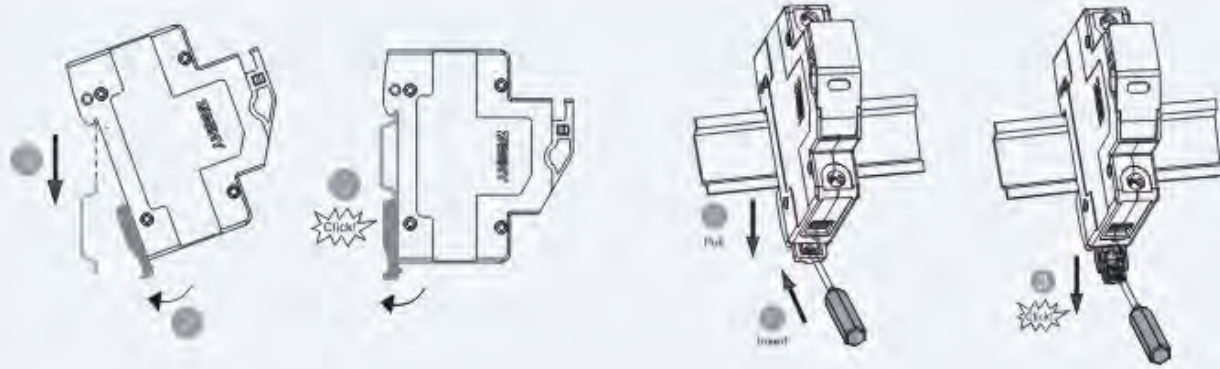
**Parameter**

| PV DC BR-30 Fuse Holder          |    |  |
|----------------------------------|----|--|
| Pole                             |    | 1P   |
| According to                     |    | IEC 60947-3                                  |
| Electrical Characteristics       |    |  |
| Rated Working Voltage            | Ue | 1000V DC                                     |
| Rated Current                    | In | 1A,2A,3A,4A,5A,6A,8A,10A,12A,15A,20A,25A,30A |
| Breaking Capacity                |    | 20KA   |
| Max Power Dissipation            |    | 3W   |
| Contol and Indication            |    |  |
| Operating State/Fault Indication |    | Indicator Light OFF/Indicator Light ON       |
| Connection and Installation      |    |  |
| Wire                             |    | 2.5mm <sup>2</sup> ~25mm <sup>2</sup>        |
| Terminal Screws                  |    | M5   |
| Torque                           | Nm | 2.5  |
| Degree of Protection             |    | IP20   |
| Installation Environment         |    |  |
| Fuse Size                        |    | 10x38 mm                                     |
| Operating Temperature Range      | TU | -40°C ~ +85°C                                |
| For Mounting On                  |    | TH35-7.5/DIN35                               |
| Pollution Degree                 |    | 3  |
| Relative Humidity                |    | +20°C≤95%, +40°C≤50%                         |
| Weight                           |    | 0.07kg Per pole                              |
| Installation Class               |    | III  |

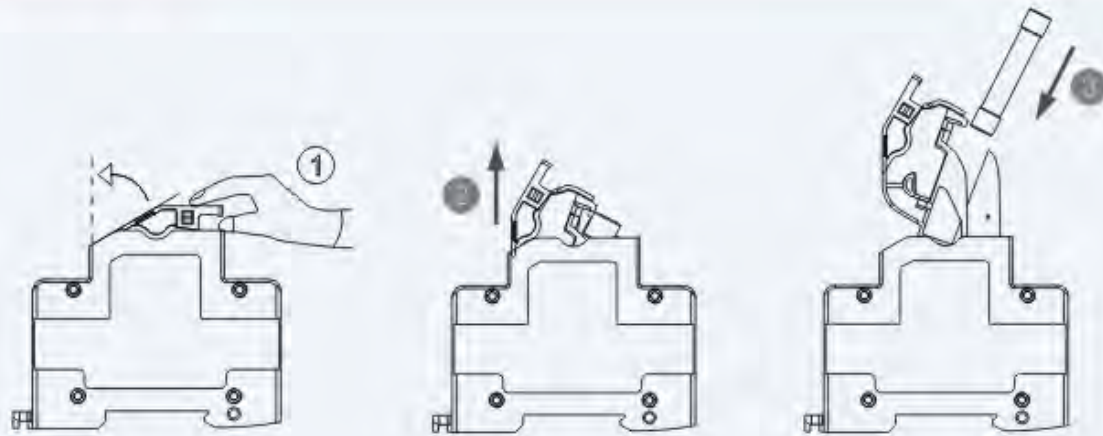


## BR-30 PV DC Fuse Holder

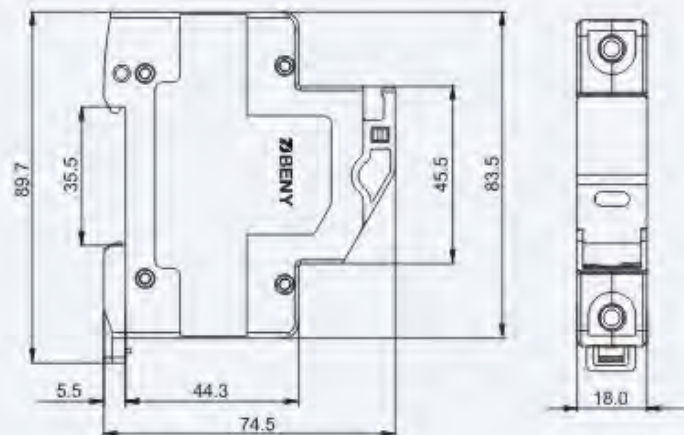
### Installation



### Replacement Fuse



### Dimensions(mm)

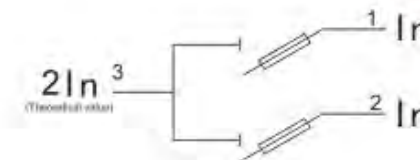
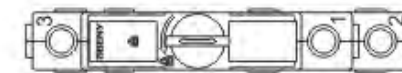


## BRL-30 Solar DC Fuse Holder



- 1 Brand
- 2 Type
- 3 Rated Current
- 4 Rated Voltage
- 5 Fuse Size
- 6 Electrical Diagram

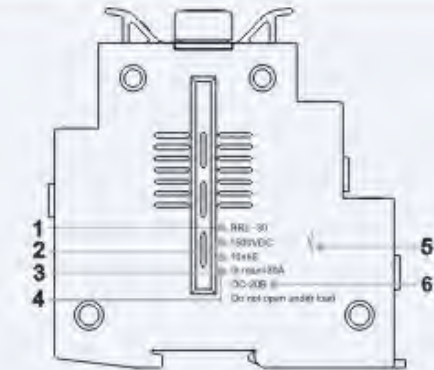
- 1500V PV system application
- The max breaking capacity of fuse link up to 20kA
- The innovative safer safe touch replacing fuse link
- Double fuse links in one holder, easier and faster to replace
- Be Suit for 10\*85mm Fuse Size
- Rated Voltage:1500V,Rated Current:30A;
- Comply with:IEC 60947-3 GB/T 14048.3;
- Certificates:CE,TUV,CCC;



### Application

**ZBENY** BRL-30 is a 1500V DC fuse holder with 2 poles input combine to 1 pole output, holding 2 pieces of 10\*85mm 1500V fuse link up to 30A. The fuse holder can be application in 1500V solar combiner box, solar inverter and solar equipments. Protect the DC circuit from over-current damaging.

### Appearance Introduction



### Type Instruction



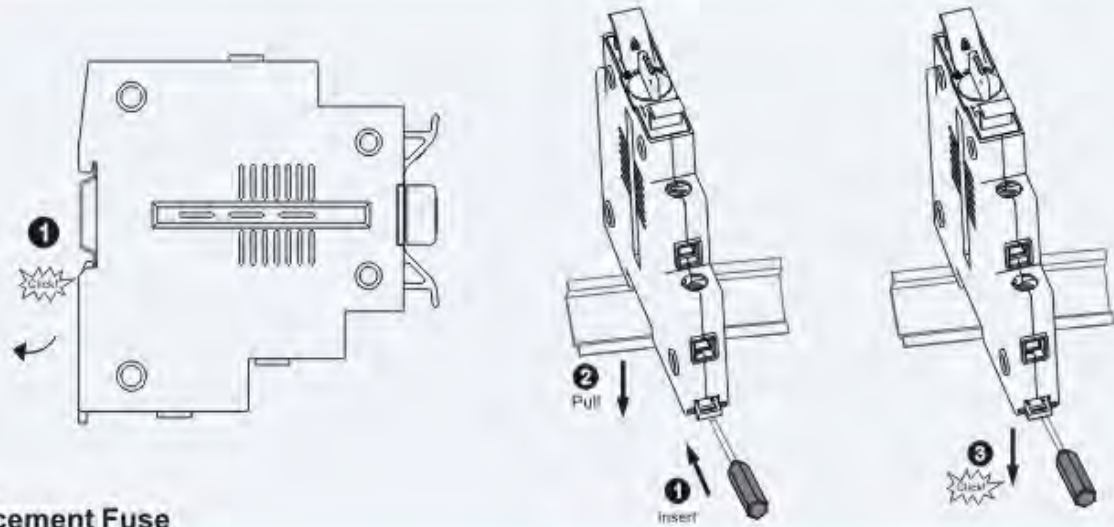
### Parameter

| PV DC BR-30 Fuse Holder     |    |   |
|-----------------------------|----|---|
| Pole                        |    | 1P  |
| According to                |    | IEC 60947-3/GB/T 14048.3                    |
| Electrical Characteristics  |    |   |
| Rated Working Voltage       | Ue | 1500V DC                                    |
| Rated Current               | In | 30 A  |
| Breaking Capacity           |    | 20KA  |
| Max Power Dissipation       |    | 3W  |
| Connection and Installation |    |   |
| Wire                        |    | 2.5mm <sup>2</sup> -25mm <sup>2</sup>       |
| Terminal Screws             |    | M5  |
| Torque                      |    | 2.5N.m                                      |
| Degree of Protection        |    | IP20  |
| Installation Environment    |    |   |
| Fuse Size                   |    | 10x85 mm                                    |
| Operating Temperature Range |    | -30°C~+70°C                                 |
| For Mounting On             |    | TH35-7.5/DIN35                              |
| Pollution Degree            |    | 3   |
| Relative Humidity           |    | +20°C≤95%,+40°C≤50%                         |
| Weight                      |    | With fuse link 221g, without fuse link 189g |
| The rotate knob position    |    |   |
|                             | ON | OFF   |

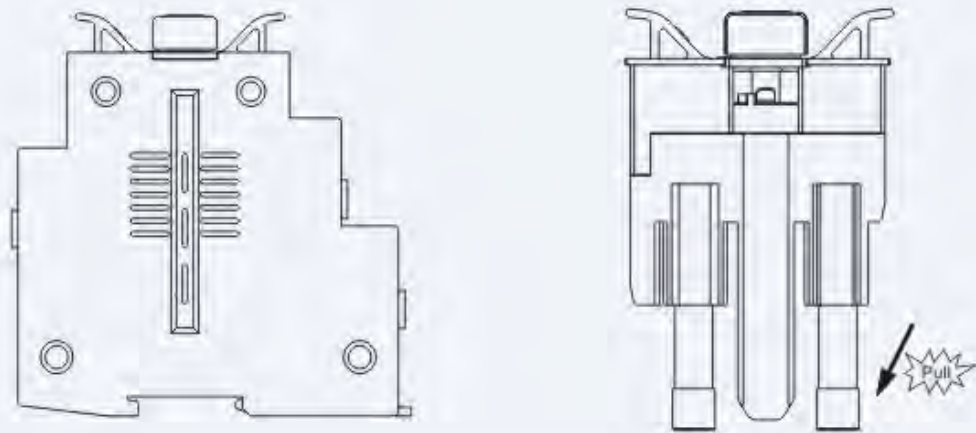


## BRL-30 Solar DC Fuse Holder

### Installation



### Replacement Fuse



### Dimensions(mm)

