DC Isolator Switch and DC Circuit Breaker for Photovoltaic

www.zjbeny.com
Beny's commitment: Making More Reliable and safer Solar PV Solutions

Our PV Products Including:

- PV DC Isolator switch
- PV DC MCB
- PV DC MCCB
- PV DC Fuse Holder
- PV DC Surge surge protection device
- PV DC monitoring device
- PV DC String Combiner Box
ZJ-BENY is one of pioneer in China in the development, production and sales of photovoltaic (PV) DC string combiner box. We mainly manufacturing DC isolator, DC circuit breaker, DC fuse, DC surge protection device and smart monitoring device.

With more than 25 years experiences in traditional electrical area we could provide powerful support for the renewable business.

With each product is backed by the skills and service of dedicated team of customer-focused specialists, we have been striving to provide high-quality products for residential, commercial and utility-scale solar projects, we strictly make the management as per the ISO9001:2008.

So far we have already obtained TUV / ROHS / CE / SAA / CB / SEMKO / VDE / CCC / CQC certifications.

ZJ-BENY enjoys a ready market in many countries and areas, our products are widely exported to Australia, Japan, Germany, Malaysia, South Africa, Sri Lanka, Indonesia, Middle East countries.

Our primary customers include Engineering Procurement Contractors (EPCs), solar developers, Real Estate developers, Electrical distributors and contractors, and Solar Financing companies with solar installations.

ZJ-BENY is dedicated to make the solar power more reliable and safe.

**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 Service

**Social 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.
The ZJ·BENY 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.

ZJ·BENY 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.
Pursue zero product Defect,
Strict quality control

Quality is life, quality is competition, with perfect products we won long-term customer. For every product we exported, we got 100% positive feedback in Australia, Europe, USA and South-east Asia.

Strong R&D capacity
Professional engineers with 25 years experience in traditional electrical products, now we build a gradient-type R&D team to develop series DC products for PV.

www.zjbeny.com
SUCCESSFUL CASES

Location: Western Australia
Location: Poland
Location: Beinwil, Switzerland
Location: Jiangxi, China
Location: Tamilnadu, India
Location: South Africa
Location: California, USA
Location: Japan
Location: Hunan, China

CERTIFICATE

www.zjbeny.com
Inverter Isolator

DC isolator switch is used between DC PV arrays and grid-connect inverters. Positioned adjacent to the inverter a DC switch is required to provide a means of manually isolating the entire PV array during system installation or any subsequent maintenance. Because if without isolator switch, the PV array cannot be turned off and terminals remain live at all times during daylight hours.

Why DC Isolator Switch?

**ZJ·BENY** DC isolator switch is used between DC PV arrays and grid-connect inverters. Positioned adjacent to the inverter a DC switch is required to provide a means of manually isolating the entire PV array during system installation or any subsequent maintenance. Because if without isolator switch, the PV array cannot be turned off and terminals remain live at all times during daylight hours.
PV DC Isolator Switches

BYH Series DC Isolator Switches

**Application**

**ZJ·BENY** BYH Series DC Isolator Switch in plastic enclosure is applied in 1~20KW Residential or Commercial Photovoltaic systems, placed between photovoltaic modules and inverters. Arcing time less than 3ms, that keep solar system more safe. To ensure its stability and long service life, our products are made by components with optimum quality. Max voltage up to 1000V DC it holds a safe lead among similar products.

**Feature**

- Pre-wired DC Main Switch with BC4(Optional)
- IP66, UV Resistance
- Arcing Time < 3ms
- "OFF" Position Lockable
- Earth Terminal
- IEC/EN60947-3
- 2 Pole, 4 Poles Available(Single | Double String)
- DC-21B: 16A,25A,32A up to 1000VDC

**Appearance Introduction**

1. Waterproof Plug
2. IP66 Ingress Protection
3. Sealed Plug
4. Knob
5. BE LOCKABLE
6. Brand
7. ON
8. OFF

**Parameter**

<table>
<thead>
<tr>
<th>Electrical Characteristics</th>
<th>BYH-32</th>
<th>BYH-32BC4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Isolator, Control</td>
<td>Isolator, Control</td>
</tr>
<tr>
<td>Comply with</td>
<td>IEC60947-3</td>
<td>IEC60947-3</td>
</tr>
<tr>
<td>Pole</td>
<td>4P</td>
<td>4P</td>
</tr>
<tr>
<td>Max-Rated Current</td>
<td>32A</td>
<td>32A</td>
</tr>
<tr>
<td>Rated Working Voltage</td>
<td>Ue</td>
<td>1000VDC</td>
</tr>
<tr>
<td>Rated Current</td>
<td>In</td>
<td>32A</td>
</tr>
<tr>
<td>Rated Insulating Voltage</td>
<td>Ui</td>
<td>1000VDC</td>
</tr>
<tr>
<td>Rated Impulsed Voltage</td>
<td>Uimp</td>
<td>8KV</td>
</tr>
<tr>
<td>Service Life/Cycle Operation</td>
<td>20000</td>
<td>25000</td>
</tr>
<tr>
<td>Mechanical</td>
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<td>Installation Environment</td>
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<td>Ingress Protection</td>
<td>IP66</td>
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<tr>
<td>Storage Temperature</td>
<td>-40°C→+85°C</td>
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</table>
**BYH Series**

**PV Isolator Switches**

### Wiring Diagram

<table>
<thead>
<tr>
<th>Contacts wiring diagram</th>
<th>300V</th>
<th>500V</th>
<th>800V</th>
<th>1000V</th>
<th>Poles in series</th>
<th>Number of Strings</th>
<th>Type Number</th>
<th>Weight(kg/PCS)</th>
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<tbody>
<tr>
<td>16A</td>
<td>16A</td>
<td>16A</td>
<td>9A</td>
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<tr>
<td>25A</td>
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<td>20A</td>
<td>11A</td>
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<td>15A</td>
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<td>32A</td>
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<td>23A</td>
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<td>23A</td>
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<td>BYH-32PE4T</td>
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<tr>
<td>32A</td>
<td>32A</td>
<td>23A</td>
<td>13A</td>
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<td>2</td>
<td>BYH-32PE4S</td>
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### Switching Configurations

<table>
<thead>
<tr>
<th>Type</th>
<th>2-pole</th>
<th>2-pole</th>
<th>4-pole</th>
<th>4-pole with Input on top</th>
<th>4-pole with Input on bottom</th>
<th>4-pole with Input and Output on top</th>
</tr>
</thead>
<tbody>
<tr>
<td>BYH-16</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4T</td>
</tr>
<tr>
<td>BYH-25</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4T</td>
</tr>
<tr>
<td>BYH-32</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4T</td>
</tr>
</tbody>
</table>

### Dimensions (mm)

- Width: 105.4mm
- Height: 70.6mm
- Depth: 40.6mm

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**True DC Switch**

Beny PV DC Isolators Switch have been specifically developed for arduous DC disconnect applications and feature an operator independent trigger ratchet switching mechanism resulting in switching times of less than 3ms. Additionally high reliability knife edge contacts and long arc cooling chambers ensure safe and effective isolation of DC voltages within solar installations.

Beny successfully obtained the Certifications: TUV/SAA/ROHS/CB/CE.

Welcome to our website for more information: www.zjbeny.com
**Application**

BYT BENY BYT Series DC Isolator Switch in plastic enclosure is applied 1~20KW Residential or Commercial Photovoltaic system, placed between photovoltaic modules and inverters. Arcing time less than 3ms, that keep solar system more safe To ensure its stability and long service life, our products are made by components with optimum quality. Max voltage up to 1200V DC It holds a safe lead among similar products.

**Feature**

- Pre-wired DC Main Switch with BC4(Optional)
- IP66, UV Resistance
- Arcing Time < 3ms
- "OFF" Position Lockable
- Earth Terminal
- IEC/EN60947-3
- 2 Pole, 4 Poles Available(Single | Double String)
- DC-21B: 16A, 25A, 32A up to 1200VDC

**Appearance Introduction**

BYT Series DC Isolator in plastic enclosure is applied 1~20KW modules and inverters. Arcing time less than 3ms, that keep solar system more safe.

**Parameter**

**Electrical Characteristics**

- **Type**: BYT-32, BYT-32BC4
- **Function**: Isolator, Control
- **Comply with**: IEC60947-3
- **Pole**: 4P
- **Max Rated Current**: 32A
- **Rated Working Voltage**: 1200V DC
- **Rated Current**: 32A
- **Rated Insulated Voltage**: 1200V DC
- **Rated Impulse Voltage**: 8KV
- **Service Life/Cycle Operation**: 20000
- **Mechanical**: 20000
- **Electrical**: 25000
- **Installation Environment**: IP66
- **Storage Temperature**: -40°C ~ +85°C

**Wiring Diagram**

- **Contacts wiring diagram**
- **600V**: 15A, 20A, 11A, 9A
- **1000V**: 15A, 20A, 11A, 9A
- **1200V**: 15A, 20A, 11A, 9A
- **Polés in series**: 2, 1
- **Number of Strings**: 6
- **Weight kg/PCS**: 0.69

**Swiching Configurations**

- **BYT-16**: 2, 2H, 4, 4G, 4G, 4G
- **BYT-25**: 2, 2H, 4, 4G, 4G, 4G
- **BYT-32**: 2, 2H, 4, 4G, 4G, 4G

**Swiching example**

**Dimensions (mm)**

- **BYT-32**: 178.6, 80.5, 118.5, 98.6
- **BYT-25**: 178.6, 80.5, 118.5, 98.6
- **BYT-16**: 178.6, 80.5, 118.5, 98.6
PV DC Isolator Switches

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BYS series isolator switch is new developed products, which successfully pass the IP66 inspection, power frequency withstand voltage test, cycle operation endurance etc. It successfully obtain certifications: UL, TUV, CB, KEMA.

BYS Series DC Isolator Switches

Application

Z.J·BENY BYS Series DC isolator switch in plastic enclosure are applicable in 1-20KW Residential or Commercial Photovoltaic system, independent with inverter. This model are designed to keep solar system more safe, Max voltage up to 1500V DC. It holds a safe lead among similar products.

Feature

- Compact structure
- pre-wired DC Main Switch with BC4 (optional)
- UV resistant, IP66 enclosure
- Arcing time < 3ms
- "OFF" position Lockable
- IEC60947-3 Standard
- DC-21B: 16A, 25A, 32A up to 1500VDC

Appearance Introduction

Parameter

<table>
<thead>
<tr>
<th>Type</th>
<th>BYS-32</th>
<th>BYS-32BC4</th>
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<tbody>
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<td>Function</td>
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<tr>
<td>Comply with</td>
<td>IEC60947-3</td>
<td></td>
</tr>
<tr>
<td>Pole</td>
<td>4P, 6P</td>
<td></td>
</tr>
<tr>
<td>Max Rated Current</td>
<td>32A</td>
<td></td>
</tr>
<tr>
<td>Rated Working Voltage Ue</td>
<td>1200V DC, 1500V DC</td>
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</tr>
<tr>
<td>Rated Current In</td>
<td>16A/25A/32A</td>
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</tr>
<tr>
<td>Rated Insulated Voltage Ui</td>
<td>1500V DC</td>
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<td>Application Category</td>
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<tr>
<td>Service Life/Cycle Operation</td>
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<td>Mechanical</td>
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<tr>
<td>Electric</td>
<td>1000</td>
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<td>Isolator Function</td>
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<td></td>
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<tr>
<td>Installation Environment</td>
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<td>Ingress Protection</td>
<td>IP66</td>
<td></td>
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<tr>
<td>Storage Temperature</td>
<td>-30°C~+70°C</td>
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</tbody>
</table>

Waterproof Plug
IP66 Ingress Protection
Sealed Plug
Type
Application Category
Rated Voltage
Rated Current
Knob
BE LOCKABLE
Electrical Diagram
PV DC Mini Circuit Breakers
Isolator Switches

True DC Product
Non-polarity
Anti-reflux
It successfully obtain certifications: TUV, CB, CCC, SAA

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www.zjbeny.com
BB1F-63 PV Mini Circuit Breakers

Application

ZJ-BENY BB1F-63 Series Mini circuit breaker with enclosure mainly be used in PV application, placed between solar modules and inverters. Max voltage up to 1200VDC, current up to 63A, with the function of overload protection, Anti-reflux protection and short-circuit protection. Also be applied to infrequently use for close and open. Scientific arc extinguishing design and flash barrier keep system more safe.

Feature

- Non-polarity
- Short-circuit/High breaking capacity and Anti-reflux protection
- Protection Functions: overload, short circuit, unfrequent operation
- Rated Voltage: up to 1200V
- Rated Current: up to 63A
- Comply with: IEC60947-2/GB14048-2
- Ingress Protection: IP66

Appearance Introduction

![Appearance Image]

Parameter

<table>
<thead>
<tr>
<th>Electrical Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
</tr>
<tr>
<td>Comply with</td>
</tr>
<tr>
<td>Pole</td>
</tr>
<tr>
<td>Rated Working Voltage</td>
</tr>
<tr>
<td>Max Rated Current</td>
</tr>
<tr>
<td>Rated Insulated Voltage</td>
</tr>
<tr>
<td>Rated Impulsed Voltage</td>
</tr>
<tr>
<td>Type of Breaking</td>
</tr>
<tr>
<td>Ultimate Breaking Capacity</td>
</tr>
<tr>
<td>Run-Breaking Capacity</td>
</tr>
<tr>
<td>Curve Type</td>
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<tr>
<td>Tripping Type</td>
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</tbody>
</table>

Service Lifespace Operation

- Mechanical Actual Value: 20000
- Electrical Actual Value: 4000

Installation Environment

- Ingress Protection: IP66
- Terminal Cross Section: 2.5~25mm²
- Working Temperature: -25°C~+70°C

Characteristic Curve

![Characteristic Curve Image]

Wiring Method

<table>
<thead>
<tr>
<th>Pole</th>
<th>1P</th>
<th>2P</th>
<th>3P</th>
<th>4P</th>
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</thead>
<tbody>
<tr>
<td>Type</td>
<td></td>
<td></td>
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<tr>
<td>Contacts Wiring graph</td>
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</tr>
</tbody>
</table>

Dimensions(mm)

![Dimensions Image]
BB1HF-63 PV DC Isolator Switches

Application
ZJ·BENY BB1HF Series PV DC isolator switches with enclosure are mainly be used in PV solar power system placed between solar modules and inverters. The Max voltage up to 1200V DC, current up to 63A, with the function of effective disconnection and Anti-reflux protection. Scientific arc extinguishing design and flash barrier keep system more safe.

Feature
- Non-polarity
- Functions: Unfrequent operation and isolation
- Rated Voltage: up to 1200V
- Rated Current: up to 63A
- Flash barrier keep system more safe
- Comply with: IEC60947-3/GB14048-3
- Ingress Protection: IP66

Appearance Introduction

Parameter

<table>
<thead>
<tr>
<th>Electrical Characteristics</th>
<th>BB1HF-63</th>
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</thead>
<tbody>
<tr>
<td>Type</td>
<td>Comply with IEC60947-3/GB14048.3</td>
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<tr>
<td>Pole</td>
<td>1P, 2P, 3P, 4P</td>
</tr>
<tr>
<td>Rated Working Voltage Ue</td>
<td>300V DC, 600V DC, 900V DC, 1200V DC</td>
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<tr>
<td>Max Rated Current In</td>
<td>63A</td>
</tr>
<tr>
<td>Rated Insulated Voltage Uimp</td>
<td>25A, 40A, 63A</td>
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<td>Service Lifetime Operation</td>
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<tr>
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<td>Ingress Protection</td>
<td>IP66</td>
</tr>
<tr>
<td>Terminal Cross Section</td>
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Wiring Method

Dimensions(mm)

Application