POWER DISTRIBUTION SOLUTION PROVIDER

> > > > > > > > > > > > >

# BSMJ

## Self-healing low-voltage shunt capacitor

The BSMJ series self-healing low-voltage shunt capacitors are suitable for use in power systems with an alternating current frequency of 50Hz and a rated voltage of 1000V or less, for improving power factor and enhancing voltage quality. Standards met: IEC 60831-1:2014; IEC 60831-2:2014

Advanced imported production equipment and high-quality imported polypropylene film result in smaller product size and more reliable quality.

The unique design and craftsmanship ensure that the product can withstand high environmental temperatures and situations with significant fluctuations in system voltage.

The new type of sealing equipment has better product sealing performance.

The newly designed installation feet are sturdy, convenient and attractive.

The unique lead-out terminal makes wiring convenient and ensures reliable and safe connections.

An anti-corrosion metal casing, elegant and sturdy, without the need for painting.








## ○ Model definition and description

| B | S | MJ | — | □ | □ | □ | □ |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | | 4 | 5 | 6 | 7 |

1.Series code (B represents parallel capacitor)

2.Impregnating agent code (S represents microcrystalline wax; K represents dry type)

3.Medium code (metallized polypropylene film)

4.Rated Voltage (kV)

5.Rated capacity (kvar)

6.Phase number (3: three-phase; 1: single-phase; 6: inter-phase)

7.Yn: Subordinate Clause

## ○ Normal working conditions and precautions

- Ambient air temperature: -25°C to +50°C
- Relative humidity: ≤50% at 40%; ≤90% at 20%
- Altitude: ≤ 2000m
- Environmental conditions: There are no harmful gases or vapors, no conductive or explosive dust, and no severe mechanical vibrations. The equipment must be operated under good ventilation conditions and is not allowed to be used in a sealed and non-ventilated environment.
- Cautionary notes for the use of capacitors:
- Overvoltage and overheating will shorten the lifespan of the capacitor. Therefore, the operating conditions (such as ambient temperature, voltage and current, etc.) should be strictly controlled.
- When installing parallel capacitors in the system, the following situations should be given full attention:
- a. In environments with severe harmonic content, it is not advisable to directly install parallel capacitors. Instead, series anti-harmonic reactors should be used. In environments with less severe harmonic content, it is recommended to increase the voltage level of the capacitors or use filtering capacitors. (Common harmonic sources include: frequency converters, DC rectifiers, inverters, electroplating equipment, medium-frequency furnaces, arc furnaces, etc.)
- b. When installing parallel capacitors for fixed connection of motors, it is recommended to select capacitors with a current less than 90% of the motor's no-load current.
- c. When the transformer is in no-load condition, the capacitors should be shut down.
- When installing parallel capacitors in the system, special switches, contactors, electronic composite switches, overcurrent relays, etc. that can limit inrush current and prevent re-energization should be selected.
- The capacitor needs to be reconnected after a delay of more than 3 minutes. Before disconnecting the power supply, a short-circuit discharge must be carried out first, and then it is safe to touch or test it.
- When using a small circuit breaker for short-circuit protection, the selection should be based on 2 to 3 times the rated current of the capacitor. It is strictly prohibited to close the circuit breaker with the capacitor connected.
- After the capacitor is disconnected from the power supply, it is necessary to ensure that the remaining voltage of the capacitor drops to 10% of the rated voltage before it can be reconnected.

## ○ Main parameters and other conditions

- Rated voltage: (0.23 - 1.2) kV, AC
- Rated frequency: 50Hz or 60Hz
- Rated capacity: (1 - 100) kvar
- Capacitance tolerance: -5% to +10%
- Loss tangent value: Under the rated power frequency voltage at 20℃, for products with a capacity of 20kvar or less, tgδ ≤ 0.0012; for products with a capacity over 30kvar, tgδ ≤ 0.0015
- Maximum allowable overvoltage: 1.1UN; no more than 8 hours in each 24-hour period
- Maximum allowable overcurrent: 1.3IN
- Self-discharge characteristic: When a 2UN DC voltage is applied to the capacitor, and the power supply is disconnected for 3 minutes, the remaining voltage drops to 50V or below.
- Main product model specifications, data sheets, appearance, and installation dimensions.

## Main technical parameters

| Product model | Rated voltage | Rated capacity | Rated capacitance | Rated current | Rated frequency | Height | Figure number |
|---|---|---|---|---|---|---|---|
| BSMJ | (kV) | (kvar) | (μF) | (A) | (Hz) | (H)mm | |
| 0.25-1-1 | 0.25 | 1 | 51 | 4 | 50 | 115 | Figure 1 Terminal M6 |
| 0.25-2-1 | 0.25 | 2 | 102 | 8 | 50 | 115 | Figure 1 Terminal M6 |
| 0.25-3-1 | 0.25 | 3 | 153 | 12 | 50 | 115 | Figure 1 Terminal M6 |
| 0.25-4-1 | 0.25 | 4 | 204 | 16 | 50 | 115 | Figure 1 Terminal M6 |
| 0.25-5-1 | 0.25 | 5 | 255 | 20 | 50 | 115 | Figure 1 Terminal M6 |
| 0.25-6-1 | 0.25 | 6 | 306 | 24 | 50 | 125 | Figure 1 Terminal M6 |
| 0.25-7.5-1 | 0.25 | 7.5 | 382 | 30 | 50 | 180 | Figure 1 Terminal M6 |
| 0.25-8-1 | 0.25 | 8 | 408 | 32 | 50 | 180 | Figure 1 Terminal M6 |
| 0.25-10-1 | 0.25 | 10 | 509 | 40 | 50 | 180 | Figure 1 Terminal M6 |
| 0.25-12-1 | 0.25 | 12 | 611 | 48 | 50 | 180 | Figure 1 Terminal M6 |
| 0.25-14-1 | 0.25 | 14 | 713 | 56 | 50 | 180 | Figure 1 Terminal M6 |
| 0.25-15-1 | 0.25 | 15 | 764 | 60 | 50 | 180 | Figure 1 Terminal M6 |
| 0.25-16-1 | 0.25 | 16 | 815 | 64 | 50 | 210 | Figure 2 Terminal M8 |
| 0.25-18-1 | 0.25 | 18 | 917 | 72 | 50 | 210 | Figure 2 Terminal M8 |
| 0.25-20-1 | 0.25 | 20 | 1019 | 80 | 50 | 210 | Figure 2 Terminal M8 |
| 0.25-22-1 | 0.25 | 22 | 1121 | 88 | 50 | 250 | Figure 2 Terminal M8 |
| 0.25-24-1 | 0.25 | 24 | 1223 | 96 | 50 | 250 | Figure 2 Terminal M8 |
| 0.25-25-1 | 0.25 | 25 | 1273 | 100 | 50 | 250 | Figure 2 Terminal M8 |
| 0.25-26-1 | 0.25 | 26 | 1325 | 104 | 50 | 230 | Figure 3 Terminal M10 |
| 0.25-28-1 | 0.25 | 28 | 1427 | 112 | 50 | 230 | Figure 3 Terminal M10 |
| 0.25-30-1 | 0.25 | 30 | 1528 | 120 | 50 | 230 | Figure 3 Terminal M10 |

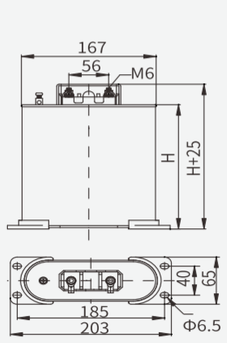



Figure 1

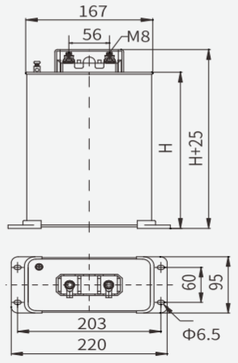



Figure 2

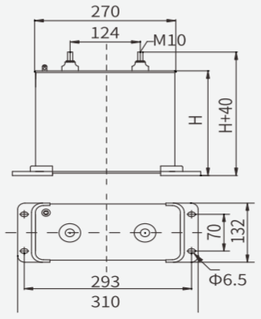



Figure 3

## Main technical parameters

| Product model | Rated voltage | Rated capacity | Rated capacitance | Rated current | Rated frequency | Height | Figure number |
|---|---|---|---|---|---|---|---|
| BSMJ | (kV) | (kvar) | (μF) | (A) | (Hz) | (H)mm | |
| 0.4-1-3(1) | 0.4 | 1 | 20 | 1.4/2.5 | 50 | 115 | Figure 4 Terminal M6 |
| 0.4-2-3(1) | 0.4 | 2 | 40 | 2.9/5 | 50 | 115 | Figure 4 Terminal M6 |
| 0.4-3-3(1) | 0.4 | 3 | 60 | 4.3/7.5 | 50 | 115 | Figure 4 Terminal M6 |
| 0.4-4-3(1) | 0.4 | 4 | 80 | 5.8/10 | 50 | 115 | Figure 4 Terminal M6 |
| 0.4-5-3(1) | 0.4 | 5 | 99 | 7.2/12.5 | 50 | 115 | Figure 4 Terminal M6 |
| 0.4-6-3(1) | 0.4 | 6 | 119 | 8.7/15 | 50 | 115 | Figure 4 Terminal M6 |
| 0.4-7.5-3(1) | 0.4 | 7.5 | 149 | 10.8/19 | 50 | 125 | Figure 4 Terminal M6 |
| 0.4-8-3(1) | 0.4 | 8 | 159 | 11.5/20 | 50 | 125 | Figure 4 Terminal M6 |
| 0.4-10-3(1) | 0.4 | 10 | 199 | 14.4/25 | 50 | 125 | Figure 4 Terminal M6 |
| 0.4-12-3(1) | 0.4 | 12 | 239 | 17.3/30 | 50 | 180 | Figure 4 Terminal M6 |
| 0.4-14-3(1) | 0.4 | 14 | 279 | 20.2/35 | 50 | 180 | Figure 4 Terminal M6 |
| 0.4-15-3(1) | 0.4 | 15 | 298 | 21.7/38 | 50 | 180 | Figure 4 Terminal M6 |
| 0.4-16-3(1) | 0.4 | 16 | 318 | 23.1/40 | 50 | 210 | Figure 4 Terminal M6 |
| 0.4-18-3(1) | 0.4 | 18 | 358 | 26.0/45 | 50 | 210 | Figure 4 Terminal M6 |
| 0.4-20-3(1) | 0.4 | 20 | 398 | 28.9/50 | 50 | 210 | Figure 4 Terminal M6 |
| 0.4-22-3(1) | 0.4 | 22 | 438 | 31.8/55 | 50 | 210 | Figure 4 Terminal M8 |
| 0.4-24-3(1) | 0.4 | 24 | 478 | 34.6/60 | 50 | 210 | Figure 5 Terminal M8 |
| 0.4-25-3(1) | 0.4 | 25 | 497 | 36.1/63 | 50 | 210 | Figure 5 Terminal M8 |
| 0.4-26-3(1) | 0.4 | 26 | 518 | 37.5/65 | 50 | 210 | Figure 5 Terminal M8 |
| 0.4-28-3(1) | 0.4 | 28 | 557 | 40.4/70 | 50 | 210 | Figure 5 Terminal M8 |
| 0.4-30-3(1) | 0.4 | 30 | 597 | 43.3/75 | 50 | 210 | Figure 5 Terminal M8 |
| 0.4-35-3(1) | 0.4 | 35 | 697 | 50.5/88 | 50 | 250 | Figure 5 Terminal M8 |
| 0.4-40-3(1) | 0.4 | 40 | 796 | 57.7/100 | 50 | 250 | Figure 5 Terminal M8 |
| 0.4-50-3(1) | 0.4 | 50 | 995 | 72.1/125 | 50 | 300 | Figure 5 Terminal M8 |
| 0.4-60-3(1) | 0.4 | 60 | 1194 | 86.6/150 | 50 | 230 | Figure 6 Terminal M10 |

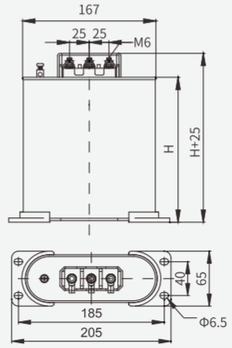



Figure 4

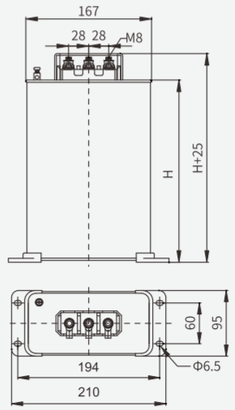



Figure 5

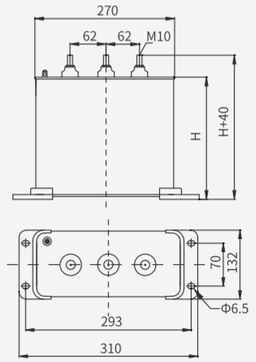



Figure 6

## Main technical parameters

| Product model | Rated voltage | Rated capacity | Rated capacitance | Rated current | Rated frequency | Height | Figure number |
|---|---|---|---|---|---|---|---|
| BSMJ | (kV) | (kvar) | (μF) | (A) | (Hz) | (H)mm | |
| 0.45-1-3(1) | 0.45 | 1 | 15.7 | 1.3/2.2 | 50 | 115 | Figure 4 Terminal M6 |
| 0.45-2-3(1) | 0.45 | 2 | 31.4 | 2.6/4.4 | 50 | 115 | Figure 4 Terminal M6 |
| 0.45-3-3(1) | 0.45 | 3 | 47 | 3.8/6.7 | 50 | 115 | Figure 4 Terminal M6 |
| 0.45-4-3(1) | 0.45 | 4 | 62.8 | 5.1/8.9 | 50 | 115 | Figure 4 Terminal M6 |
| 0.45-5-3(1) | 0.45 | 5 | 78.6 | 6.4/11.1 | 50 | 115 | Figure 4 Terminal M6 |
| 0.45-6-3(1) | 0.45 | 6 | 94.3 | 7.7/13.3 | 50 | 115 | Figure 4 Terminal M6 |
| 0.45-7.5-3(1) | 0.45 | 7.5 | 117.9 | 9.6/16.7 | 50 | 115 | Figure 4 Terminal M6 |
| 0.45-8-3(1) | 0.45 | 8 | 125.7 | 10.3/17.8 | 50 | 115 | Figure 4 Terminal M6 |
| 0.45-10-3(1) | 0.45 | 10 | 157 | 12.8/22.2 | 50 | 125 | Figure 4 Terminal M6 |
| 0.45-12-3(1) | 0.45 | 12 | 188.6 | 15.4/26.7 | 50 | 180 | Figure 4 Terminal M6 |
| 0.45-14-3(1) | 0.45 | 14 | 220 | 18/31 | 50 | 180 | Figure 4 Terminal M6 |
| 0.45-15-3(1) | 0.45 | 15 | 235.8 | 19.3/33.3 | 50 | 180 | Figure 4 Terminal M6 |
| 0.45-16-3(1) | 0.45 | 16 | 251 | 20.5/35.5 | 50 | 180 | Figure 4 Terminal M6 |
| 0.45-18-3(1) | 0.45 | 18 | 283 | 23.1/40 | 50 | 210 | Figure 4 Terminal M6 |
| 0.45-20-3(1) | 0.45 | 20 | 314 | 25.7/44.4 | 50 | 210 | Figure 4 Terminal M6 |
| 0.45-22-3(1) | 0.45 | 22 | 345 | 28.2/48.9 | 50 | 240 | Figure 4 Terminal M6 |
| 0.45-24-3(1) | 0.45 | 24 | 377 | 30.8/53.3 | 50 | 240 | Figure 4 Terminal M8 |
| 0.45-25-3(1) | 0.45 | 25 | 393 | 32.1/55.6 | 50 | 240 | Figure 4 Terminal M8 |
| 0.45-26-3(1) | 0.45 | 26 | 408 | 33.4/57.8 | 50 | 210 | Figure 5 Terminal M8 |
| 0.45-28-3(1) | 0.45 | 28 | 440 | 35.9/62.2 | 50 | 210 | Figure 5 Terminal M8 |
| 0.45-30-3(1) | 0.45 | 30 | 471 | 38.5/66.7 | 50 | 210 | Figure 5 Terminal M8 |
| 0.45-35-3(1) | 0.45 | 35 | 550 | 44.9/77.8 | 50 | 250 | Figure 5 Terminal M8 |
| 0.45-40-3(1) | 0.45 | 40 | 628 | 51.3/88.9 | 50 | 250 | Figure 5 Terminal M8 |
| 0.45-50-3(1) | 0.45 | 50 | 786 | 64.1/111.1 | 50 | 300 | Figure 5 Terminal M8 |
| 0.45-60-3(1) | 0.45 | 60 | 943 | 77/133.3 | 50 | 230 | Figure 6 Terminal M10 |
| 0.48-1-3(1) | 0.48 | 1 | 13.8 | 1.2/2.1 | 50 | 125 | Figure 4 Terminal M6 |
| 0.48-2-3(1) | 0.48 | 2 | 27.6 | 2.4/4.2 | 50 | 125 | Figure 4 Terminal M6 |
| 0.48-3-3(1) | 0.48 | 3 | 41.5 | 3.6/6.2 | 50 | 125 | Figure 4 Terminal M6 |
| 0.48-4-3(1) | 0.48 | 4 | 55.2 | 4.8/8.3 | 50 | 125 | Figure 4 Terminal M6 |
| 0.48-5-3(1) | 0.48 | 5 | 69 | 6.0/10.4 | 50 | 115 | Figure 4 Terminal M6 |
| 0.48-6-3(1) | 0.48 | 6 | 82.8 | 7.2/12.5 | 50 | 125 | Figure 4 Terminal M6 |
| 0.48-7.5-3(1) | 0.48 | 7.5 | 103.6 | 9.0/15.6 | 50 | 125 | Figure 4 Terminal M6 |
| 0.48-8-3(1) | 0.48 | 8 | 110.5 | 9.6/16.7 | 50 | 125 | Figure 4 Terminal M6 |
| 0.48-10-3(1) | 0.48 | 10 | 138 | 12.0/20.8 | 50 | 125 | Figure 4 Terminal M6 |
| 0.48-12-3(1) | 0.48 | 12 | 167.8 | 14.4/25 | 50 | 180 | Figure 4 Terminal M6 |
| 0.48-14-3(1) | 0.48 | 14 | 193.4 | 16.8/29.2 | 50 | 210 | Figure 4 Terminal M6 |
| 0.48-15-3(1) | 0.48 | 15 | 207 | 18.0/31.2 | 50 | 210 | Figure 4 Terminal M6 |
| 0.48-16-3(1) | 0.48 | 16 | 221 | 19.3/33.3 | 50 | 210 | Figure 4 Terminal M6 |
| 0.48-18-3(1) | 0.48 | 18 | 248.7 | 21.6/37.5 | 50 | 210 | Figure 4 Terminal M6 |
| 0.48-20-3(1) | 0.48 | 20 | 276.3 | 24/41.7 | 50 | 210 | Figure 4 Terminal M6 |
| 0.48-22-3(1) | 0.48 | 22 | 304 | 26.5/45.8 | 50 | 210 | Figure 5 Terminal M8 |
| 0.48-24-3(1) | 0.48 | 24 | 331.5 | 28.5/50 | 50 | 210 | Figure 5 Terminal M8 |
| 0.48-25-3(1) | 0.48 | 25 | 345.4 | 30.7/52.1 | 50 | 210 | Figure 5 Terminal M8 |
| 0.48-26-3(1) | 0.48 | 26 | 359.2 | 31.3/54.2 | 50 | 210 | Figure 5 Terminal M8 |
| 0.48-28-3(1) | 0.48 | 28 | 386.5 | 33.7/58.3 | 50 | 210 | Figure 5 Terminal M8 |
| 0.48-30-3(1) | 0.48 | 30 | 414.5 | 36.1/62.5 | 50 | 210 | Figure 5 Terminal M8 |
| 0.48-35-3(1) | 0.48 | 35 | 483.5 | 42.1/72.9 | 50 | 250 | Figure 5 Terminal M8 |
| 0.48-40-3(1) | 0.48 | 40 | 552.6 | 48.1/83.3 | 50 | 250 | Figure 5 Terminal M8 |
| 0.48-50-3(1) | 0.48 | 50 | 690.7 | 60.1/104.2 | 50 | 310 | Figure 5 Terminal M10 |
| 0.48-60-3(1) | 0.48 | 60 | 829 | 72.1/125 | 50 | 230 | Figure 6 Terminal M10 |

## Main technical parameters

| Product model | Rated voltage | Rated capacity | Rated capacitance | Rated current | Rated frequency | Height | Figure number |
|---|---|---|---|---|---|---|---|
| BSMJ | (kV) | (kvar) | (μF) | (A) | (Hz) | (H)mm | |
| 0.525-1-3(1) | 0.525 | 1 | 12 | 1.1/2 | 50 | 115 | Figure 4 Terminal M6 |
| 0.525-2-3(1) | 0.525 | 2 | 23 | 2.2/4 | 50 | 115 | Figure 4 Terminal M6 |
| 0.525-3-3(1) | 0.525 | 3 | 34 | 3.3/5.7 | 50 | 115 | Figure 4 Terminal M6 |
| 0.525-4-3(1) | 0.525 | 4 | 46 | 4.4/8 | 50 | 115 | Figure 4 Terminal M6 |
| 0.525-5-3(1) | 0.525 | 5 | 58 | 5.5/10 | 50 | 115 | Figure 4 Terminal M6 |
| 0.525-6-3(1) | 0.525 | 6 | 69 | 6.6/11 | 50 | 115 | Figure 4 Terminal M6 |
| 0.525-7.5-3(1) | 0.525 | 7.5 | 87 | 8.3/14 | 50 | 115 | Figure 4 Terminal M6 |
| 0.525-8-3-3(1) | 0.525 | 8 | 92 | 8.8/15 | 50 | 125 | Figure 4 Terminal M6 |
| 0.525-10-3(1) | 0.525 | 10 | 115 | 11.0/19 | 50 | 125 | Figure 4 Terminal M6 |
| 0.525-12-3(1) | 0.525 | 12 | 139 | 13.2/23 | 50 | 180 | Figure 4 Terminal M6 |
| 0.525-14-3(1) | 0.525 | 14 | 162 | 15.4/27 | 50 | 180 | Figure 4 Terminal M6 |
| 0.525-15-3(1) | 0.525 | 15 | 173 | 16.5/29 | 50 | 180 | Figure 4 Terminal M6 |
| 0.525-16-3(1) | 0.525 | 16 | 185 | 17.6/30 | 50 | 210 | Figure 4 Terminal M6 |
| 0.525-18-3(1) | 0.525 | 18 | 208 | 19.8/34 | 50 | 210 | Figure 4 Terminal M6 |
| 0.525-20-3(1) | 0.525 | 20 | 231 | 22.0/38 | 50 | 210 | Figure 4 Terminal M6 |
| 0.525-24-3(1) | 0.525 | 24 | 277 | 26.4/46 | 50 | 210 | Figure 5 Terminal M8 |
| 0.525-25-3(1) | 0.525 | 25 | 289 | 27.5/48 | 50 | 210 | Figure 5 Terminal M8 |
| 0.525-30-3(1) | 0.525 | 30 | 346 | 33.0/57 | 50 | 210 | Figure 5 Terminal M8 |
| 0.525-35-3(1) | 0.525 | 35 | 404 | 38.5/67 | 50 | 250 | Figure 5 Terminal M8 |
| 0.525-40-3(1) | 0.525 | 40 | 462 | 44.0/76 | 50 | 250 | Figure 5 Terminal M8 |
| 0.525-50-3(1) | 0.525 | 50 | 577 | 55.0/95 | 50 | 300 | Figure 5 Terminal M8 |
| 0.525-60-3(1) | 0.525 | 60 | 693 | 66.0/11 | 50 | 230 | Figure 6 Terminal M10 |
| 0.69-5-3 | 0.69 | 5 | 33 | 4.2 | 50 | 115 | Figure 4 Terminal M6 |
| 0.69-6-3 | 0.69 | 6 | 40 | 5 | 50 | 115 | Figure 4 Terminal M6 |
| 0.69-7.5-3 | 0.69 | 7.5 | 50 | 6.3 | 50 | 115 | Figure 4 Terminal M6 |
| 0.69-8-3 | 0.69 | 8 | 53 | 6.7 | 50 | 125 | Figure 4 Terminal M6 |
| 0.69-10-3 | 0.69 | 10 | 67 | 8.4 | 50 | 180 | Figure 4 Terminal M6 |
| 0.69-12-3 | 0.69 | 12 | 80 | 10 | 50 | 180 | Figure 4 Terminal M6 |
| 0.69-14-3 | 0.69 | 14 | 94 | 11.7 | 50 | 180 | Figure 4 Terminal M6 |
| 0.69-15-3 | 0.69 | 15 | 100 | 12.6 | 50 | 210 | Figure 4 Terminal M6 |
| 0.69-16-3 | 0.69 | 16 | 107 | 13.1 | 50 | 210 | Figure 4 Terminal M6 |
| 0.69-18-3 | 0.69 | 18 | 120 | 15.1 | 50 | 240 | Figure 4 Terminal M6 |
| 0.69-20-3 | 0.69 | 20 | 134 | 16.7 | 50 | 240 | Figure 4 Terminal M6 |
| 0.69-22-3 | 0.69 | 22 | 147 | 18.4 | 50 | 210 | Figure 5 Terminal M8 |
| 0.69-24-3 | 0.69 | 24 | 161 | 20.1 | 50 | 210 | Figure 5 Terminal M8 |
| 0.69-25-3 | 0.69 | 25 | 167 | 20.9 | 50 | 210 | Figure 5 Terminal M8 |
| 0.69-26-3 | 0.69 | 26 | 174 | 21.8 | 50 | 210 | Figure 5 Terminal M8 |
| 0.69-28-3 | 0.69 | 28 | 187 | 23.4 | 50 | 250 | Figure 5 Terminal M8 |
| 0.69-30-3 | 0.69 | 30 | 201 | 25.1 | 50 | 250 | Figure 5 Terminal M8 |
| 0.69-35-3 | 0.69 | 35 | 234 | 29.3 | 50 | 300 | Figure 5 Terminal M8 |
| 0.69-40-3 | 0.69 | 40 | 267 | 33.5 | 50 | 300 | Figure 5 Terminal M8 |
| 0.69-50-3 | 0.69 | 50 | 334 | 41.8 | 50 | 230 | Figure 6 Terminal M10 |
| 0.69-60-3 | 0.69 | 60 | 401 | 50.8 | 50 | 230 | Figure 6 Terminal M10 |

## Main technical parameters

| Product model | Rated voltage | Rated capacity | Rated capacitance | Rated current | Rated frequency | Height | Figure number |
|---|---|---|---|---|---|---|---|
| BSMJ | (kV) | (kvar) | (μF) | (A) | (Hz) | (H)mm | |
| 0.25-1-3YN | 0.25 | 1 | 51 | 1.3 | 50 | 115 | Figure 7 Terminal M6 |
| 0.25-2-3YN | 0.25 | 2 | 102 | 2.7 | 50 | 115 | Figure 7 Terminal M6 |
| 0.25-3-3YN | 0.25 | 3 | 153 | 4 | 50 | 115 | Figure 7 Terminal M6 |
| 0.25-4-3YN | 0.25 | 4 | 204 | 5.3 | 50 | 115 | Figure 7 Terminal M6 |
| 0.25-5-3YN | 0.25 | 5 | 254 | 6.7 | 50 | 115 | Figure 7 Terminal M6 |
| 0.25-6-3YN | 0.25 | 6 | 305 | 8 | 50 | 125 | Figure 7 Terminal M6 |
| 0.25-7.5-3YN | 0.25 | 7.5 | 382 | 10 | 50 | 180 | Figure 7 Terminal M6 |
| 0.25-8-3YN | 0.25 | 8 | 407 | 10.7 | 50 | 180 | Figure 7 Terminal M6 |
| 0.25-10-3YN | 0.25 | 10 | 509 | 13.3 | 50 | 180 | Figure 7 Terminal M6 |
| 0.25-12-3YN | 0.25 | 12 | 611 | 16 | 50 | 210 | Figure 7 Terminal M6 |
| 0.25-14-3YN | 0.25 | 14 | 713 | 18.7 | 50 | 210 | Figure 7 Terminal M6 |
| 0.25-15-3YN | 0.25 | 15 | 764 | 20 | 50 | 240 | Figure 7 Terminal M6 |
| 0.25-16-3YN | 0.25 | 16 | 815 | 21.3 | 50 | 210 | Figure 8 Terminal M8 |
| 0.25-18-3YN | 0.25 | 18 | 917 | 24 | 50 | 210 | Figure 8 Terminal M8 |
| 0.25-20-3YN | 0.25 | 20 | 1018 | 26.7 | 50 | 210 | Figure 8 Terminal M8 |
| 0.25-22-3YN | 0.25 | 22 | 1120 | 29.3 | 50 | 250 | Figure 8 Terminal M8 |
| 0.25-24-3YN | 0.25 | 24 | 1222 | 32 | 50 | 250 | Figure 8 Terminal M8 |
| 0.25-25-3YN | 0.25 | 25 | 1273 | 33.3 | 50 | 250 | Figure 8 Terminal M8 |
| 0.25-30-3YN | 0.25 | 30 | 1528 | 40 | 50 | 300 | Figure 8 Terminal M8 |
| 0.25-35-3YN | 0.25 | 35 | 1782.53 | 46.7 | 50 | 300 | Figure 8 Terminal M8 |
| 0.25-40-3YN | 0.25 | 40 | 2037.18 | 53.3 | 50 | 230 | Figure 9 Terminal M10 |

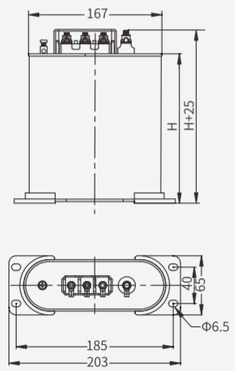



Figure 7

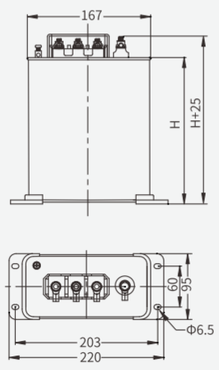



Figure 8

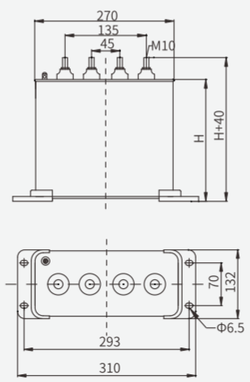



Figure 9



# BSMJ

## Cylindrical low-voltage power capacitor

The BSMJ series self-healing environmental-friendly capacitors are produced in strict accordance with the international standard IEC60831-1:2002 "Self-healing Parallel Capacitors for AC Power Systems with Nominal Voltage 1kV and Below". They are used to enhance power factor, reduce reactive power loss, and improve voltage quality. This type of product is the mainstream product in countries such as Europe and America.

Connection Terminals: Capacitors with an outer diameter of ≥ 86mm use B-type terminals for better current-carrying capacity and heat reduction. An over-temperature protection device is also included.

Cylindrical Aluminum Shell: Provides strong protection against explosion and leakage, ensuring safety and environmental friendliness.

High-Quality Film: Utilizes advanced metallized polypropylene film, which is compact, has low temperature rise, excellent electrical performance, and a long service life, enhancing the capacity of compensation cabinets.

Versatility:Adaptable Design: Suitable for high temperatures and environments with significant voltage fluctuations.

Mounting Options: Features M12/M16 threaded mounting for user-friendly installation and adjustment.



## Model definition and description

| B | S | MJ | — | □ | □ | □ | □ |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | | 4 | 5 | 6 | 7 |

1.Series code (B represents parallel capacitor)

2.Impregnating agent code (S represents microcrystalline wax; K represents dry type)

3.Medium code (metallized polypropylene film)

4.Rated Voltage (kV)

5.Rated capacity (kvar)

6.Phase number (3: three-phase; 1: single-phase; 6: inter-phase)

7.Yn: Subordinate Clause

## Normal working conditions and precautions

- Ambient air temperature: -25°C to +50°C
- Relative humidity: ≤50% at 40%; ≤90% at 20%
- Altitude: ≤ 2000m
- Environmental conditions: There are no harmful gases or vapors, no conductive or explosive dust, and no severe mechanical vibrations. The equipment must be operated under good ventilation conditions and is not allowed to be used in a sealed and non-ventilated environment.
- Cautionary notes for the use of capacitors:
- Overvoltage and overheating will shorten the lifespan of the capacitor. Therefore, the operating conditions (such as ambient temperature, voltage and current, etc.) should be strictly controlled.
- When installing parallel capacitors in the system, the following situations should be given full attention:
- a. In environments with severe harmonic content, it is not advisable to directly install parallel capacitors. Instead, series anti-harmonic reactors should be used. In environments with less severe harmonic content, it is recommended to increase the voltage level of the capacitors or use filtering capacitors. (Common harmonic sources include: frequency converters, DC rectifiers, inverters, electroplating equipment, medium-frequency furnaces, arc furnaces, etc.)
- b. When installing parallel capacitors for fixed connection of motors, it is recommended to select capacitors with a current less than 90% of the motor's no-load current.
- c. When the transformer is in no-load condition, the capacitors should be shut down.
- When installing parallel capacitors in the system, special switches, contactors, electronic composite switches, overcurrent relays, etc. that can limit inrush current and prevent re-energization should be selected.
- The capacitor needs to be reconnected after a delay of more than 3 minutes. Before disconnecting the power supply, a short-circuit discharge must be carried out first, and then it is safe to touch or test it.
- When using a small circuit breaker for short-circuit protection, the selection should be based on 2 to 3 times the rated current of the capacitor. It is strictly prohibited to close the circuit breaker with the capacitor connected.
- After the capacitor is disconnected from the power supply, it is necessary to ensure that the remaining voltage of the capacitor drops to 10% of the rated voltage before it can be reconnected.

## Main parameters and other conditions

- CRated voltage: 0.23kV, 0.25kV, 0.28kV, 0.4kV, 0.45kV, 0.48kV, 0.525kV
- Rated frequency: 50Hz or 60Hz Rated capacity: (1~50) kvar
- Capacitance tolerance: -5% to +10%;
- The ratio of the maximum and minimum capacitances measured between any two output terminals of the three-phase capacitor shall not exceed 1.08 times.
- Tangential loss tangent value tg5: Under the rated power frequency voltage at 20℃, it is less than 0.0012
- Maximum allowable overvoltage: 1.1UN; no more than 8 hours in every 24 hours; Maximum allowable overcurrent: 1.3IN
- Self-discharge characteristic: When a 2UN DC voltage is applied to the capacitor, and the power supply is disconnected for 3 minutes, the remaining voltage drops to 50V or below.

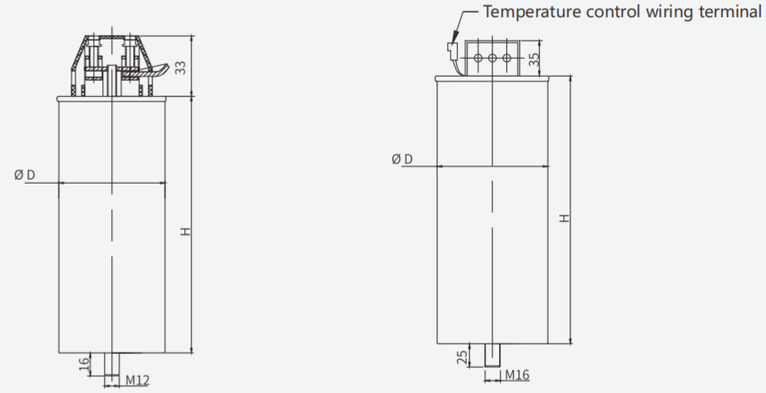
## Main technical parameters

| Product model | Rated voltage | Rated capacity | Rated capacitance | Rated frequency | Rated current | Dimensions | Screw size | Terminal structure type |
|---|---|---|---|---|---|---|---|---|
| BSMJ | (kV) | (kvar) | (μF) | (Hz) | (A) | (D×H)mm | | |
| 0.23-3-3YN(1) | 0.23 | 0.23 | 181 | 50 | 4.33/13 | ø86×240 | M12 *16 | A/B |
| 0.23-5-3YN(1) | 0.23 | 0.23 | 301 | 50 | 7.2/21.7 | ø86×240 | M12 *16 | A/B |
| 0.23-10-3YN(1) | 0.23 | 0.23 | 602 | 50 | 14.4/43.4 | ø86×240 | M12 *16 | A/B |
| 0.23-12-3YN(1) | 0.23 | 0.23 | 722 | 50 | 17.3/52.1 | ø96×240 | M16 *25 | A/B |
| 0.23-15-3YN(1) | 0.23 | 0.23 | 903 | 50 | 21.7/65.2 | ø96×290 | M16 *25 | A/B |
| 0.23-18-3YN(1) | 0.23 | 0.23 | 1084 | 50 | 26/78.2 | ø106×290 | M16 *25 | A/B |
| 0.23-20-3YN(1) | 0.23 | 0.23 | 1204 | 50 | 28.9/86.9 | ø106×290 | M16 *25 | A/B |
| 0.25-3-3YN(1) | 0.25 | 0.25 | 153 | 50 | 4/12 | ø86×240 | M12 *16 | A/B |
| 0.25-5-3YN(1) | 0.25 | 0.25 | 255 | 50 | 6.7/20 | ø86×240 | M12 *16 | A/B |
| 0.25-10-3YN(1) | 0.25 | 0.25 | 510 | 50 | 13.3/40 | ø86×240 | M12 *16 | A/B |
| 0.25-12-3YN(1) | 0.25 | 0.25 | 611 | 50 | 16/48 | ø86×240 | M12 *16 | A/B |
| 0.25-15-3YN(1) | 0.25 | 0.25 | 764 | 50 | 20/60 | ø96×240 | M16 *25 | A/B |
| 0.25-18-3YN(1) | 0.25 | 0.25 | 917 | 50 | 24/72 | ø96×290 | M16 *25 | A/B |
| 0.25-20-3YN(1) | 0.25 | 0.25 | 1019 | 50 | 26.7/80 | ø106×290 | M16 *25 | A/B |
| 0.25-25-3YN(1) | 0.25 | 0.25 | 1274 | 50 | 33.3/100 | ø116×290 | M16 *25 | A/B |
| 0.25-30-3YN(1) | 0.25 | 0.25 | 1529 | 50 | 40/120 | ø116×290 | M16 *25 | A/B |
| 0.28-3-3YN(1) | 0.28 | 0.28 | 122 | 50 | 3.57/10.7 | ø86×240 | M12 *16 | A/B |
| 0.28-5-3YN(1) | 0.28 | 0.28 | 203 | 50 | 5.9/17.8 | ø86×240 | M12 *16 | A/B |
| 0.28-10-3YN(1) | 0.28 | 0.28 | 406 | 50 | 11.9/35.7 | ø86×240 | M12 *16 | A/B |
| 0.28-12-3YN(1) | 0.28 | 0.28 | 487 | 50 | 14.3/42.8 | ø86×240 | M12 *16 | A/B |
| 0.28-15-3YN(1) | 0.28 | 0.28 | 609 | 50 | 17.8/53.5 | ø86×240 | M12 *16 | A/B |
| 0.28-18-3YN(1) | 0.28 | 0.28 | 731 | 50 | 21.4/64.2 | ø96×240 | M16 *25 | A/B |
| 0.28-20-3YN(1) | 0.28 | 0.28 | 812 | 50 | 23.8/71.4 | ø96×290 | M16 *25 | A/B |
| 0.28-25-3YN(1) | 0.28 | 0.28 | 1016 | 50 | 29.7/89.3 | ø96×290 | M16 *25 | A/B |
| 0.28-30-3YN(1) | 0.28 | 0.28 | 1219 | 50 | 35.7/107 | ø106×290 | M16 *25 | A/B |

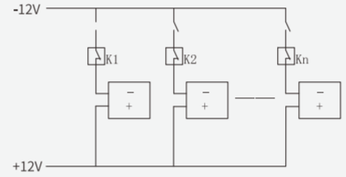
## Main technical parameters

| Product model | Rated voltage | Rated capacity | Rated capacitance | Rated frequency | Rated current | Dimensions | Screw size | Terminal structure type |
|---|---|---|---|---|---|---|---|---|
| BSMJ | (kV) | (kvar) | (μF) | (Hz) | (A) | (D×H)mm | | |
| 0.45-5-3（1） | 0.45 | 5 | 79 | 50 | 6.4/11 | ø76×240 | M12 *16 | A/B |
| 0.45-10-3（1） | 0.45 | 10 | 157 | 50 | 12.8/22 | ø76×240 | M12 *16 | A/B |
| 0.45-15-3（1） | 0.45 | 15 | 236 | 50 | 19.2/33 | ø76×240 | M12 *16 | A/B |
| 0.45-20-3（1） | 0.45 | 20 | 315 | 50 | 25.7/44 | ø86×240 | M12 *16 | A/B |
| 0.45-25-3（1） | 0.45 | 25 | 393 | 50 | 32.1/56 | ø96×290 | M16 *25 | A/B |
| 0.45-30-3（1） | 0.45 | 30 | 472 | 50 | 38.5/67 | ø96×290 | M16 *25 | A/B |
| 0.45-35-3（1） | 0.45 | 35 | 550 | 50 | 58.9/78 | ø106×290 | M16 *25 | A/B |
| 0.45-40-3（1） | 0.45 | 40 | 629 | 50 | 51.3/89 | ø116×290 | M16 *25 | A/B |
| 0.48-5-3（1） | 0.48 | 5 | 69 | 50 | 6.0/10.4 | ø76×240 | M12 *16 | A/B |
| 0.48-10-3（1） | 0.48 | 10 | 138 | 50 | 12.0/20.8 | ø76×240 | M12 *16 | A/B |
| 0.48-15-3（1） | 0.48 | 15 | 207 | 50 | 18.0/31.2 | ø86×240 | M12 *16 | A/B |
| 0.48-20-3（1） | 0.48 | 20 | 276 | 50 | 24/41.7 | ø96×240 | M16 *25 | A/B |
| 0.48-25-3（1） | 0.48 | 25 | 346 | 50 | 30.1/52.1 | ø96×290 | M16 *25 | A/B |
| 0.45-30-3（1） | 0.48 | 30 | 415 | 50 | 36.1/62.5 | ø106×290 | M16 *25 | A/B |
| 0.48-35-3（1） | 0.48 | 35 | 484 | 50 | 42.1/72.9 | ø116×290 | M16 *25 | A/B |
| 0.48-40-3（1） | 0.48 | 40 | 553 | 50 | 48.1/83.3 | ø116×290 | M16 *25 | A/B |
| 0.525-5-3（1） | 0.525 | 5 | 58 | 50 | 5.5/10 | ø76×240 | M12 *16 | A/B |
| 0.525-10-3（1） | 0.525 | 10 | 116 | 50 | 11/19 | ø76×240 | M12 *16 | A/B |
| 0.525-15-3（1） | 0.525 | 15 | 173 | 50 | 16.5/29 | ø86×240 | M12 *16 | A/B |
| 0.525-20-3（1） | 0.525 | 20 | 231 | 50 | 22/38 | ø96×240 | M16 *25 | A/B |
| 0.525-25-3（1） | 0.525 | 25 | 289 | 50 | 27.5/48 | ø96×290 | M16 *25 | A/B |
| 0.525-30-3（1） | 0.525 | 30 | 347 | 50 | 33/57 | ø106×290 | M16 *25 | A/B |
| 0.525-35-3（1） | 0.525 | 35 | 404 | 50 | 38.5/66.7 | ø106×290 | M16 *25 | A/B |
| 0.525-40-3（1） | 0.525 | 40 | 462 | 50 | 44/76.2 | ø116×290 | M16 *25 | A/B |

## Appearance and installation dimensions



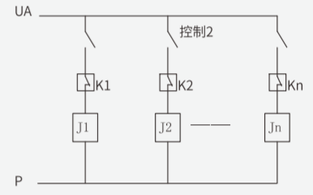

Structural diagram of Type B terminal




When used in conjunction with the composite switch, the function of the temperature protector.

**WORKING PRINCIPLE:**

When the operating temperature of the capacitor exceeds 60 degrees, the temperature switch changes from closed to open, cutting off the 12V control voltage of the composite switch. The composite switch then changes from closed to open, causing the capacitor to be de-energized, thereby achieving the purpose of protecting the capacitor.




AC contactor: 380V; P point to phase B/C: 220V;
P point to phase N: 220V.

When used in conjunction with the contactor for communication, the function of the temperature protector.

**WORKING PRINCIPLE:**

When the operating temperature of the capacitor exceeds 60 degrees, the temperature switch changes from closed to open, cutting off the voltage of the AC contactor coil and causing the capacitor to be de-energized. This serves to protect the capacitor.