# Shock Block GFCI
## SB5000 Series

Industrial Shock Block for Personnel Protection

*For 32 A and 60 A only



## Description

### Special-Purpose Ground-Fault Circuit Interrupter (SPGFCI), Class C and Class D

The Industrial Shock Block® SB5000 series is a personnel protection device designed to meet the requirements for special-purpose GFCIs defined by UL 943C. This standard outlines GFCI classes specifically designed for use in industrial facilities. Class C GFCIs are intended to be used on three-phase systems where the line-to-line voltage is 480 V or less with a trip level of 20 mA, while Class D GFCIs are intended to be used on 600 V systems. The Industrial Shock Block includes DFT harmonic filtering, an automatic self-test feature, and is compliant to the UL 1998 Software in Programmable Components standard.

### Ground-Fault Circuit Interrupter (GFCI), Class A

The Shock Block is available as a 208 V Class A GFCI, allowing commercial kitchens, construction sites, and other non-dwelling units with wet areas to meet NEC 210.8(B) for their three-phase loads up to 100 A.

### Equipment Ground-Fault Protective Device (EGFPD)

Industrial Shock Block is also available with adjustable protection settings as an EGFPD. The EGFPD models can be set to trip at 6 mA or from 10–100 mA in increments of 10 mA. This offers more flexibility since GFCI devices are not allowed to have an adjustable trip level.

### Ratings and Models

Industrial Shock Block (GFCI & EGFPD) is available for three-phase voltages from 208 to 600 V with a maximum full load current up to 100 A. The power system can be either solidly or high-resistance grounded, and the load must be three-phase without a neutral. The standard enclosure is IP 69K/NEMA 4X and outdoor rated, suitable for all industrial environments including high temperature washdown used in food production.

### Ground Wire (Load-Ground) Monitor

The Industrial Shock Block also monitors the ground wire (load-ground) connection between the Industrial Shock Block and load. This is a required feature for Class C and D GFCI devices and is recommended for Class A GFCI and EGFPD devices. If the ground-return path is broken, the Industrial Shock Block will trip and provide an alarm by changing the state of the alarm contacts. This monitoring circuit includes an extra wire (pilot wire) between the Industrial Shock Block and load. At the load, the pilot wire is connected to a termination device. The other end of the termination device is connected to the load ground (typically the enclosure).


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## Features & Benefits

| FEATURES | BENEFITS |
|---|---|
| **UL 943 inverse time trip curve** | Inverse time detection circuit protects people while also reducing the probability of nuisance tripping |
| **DFT (Discrete Fourier Transform) filtering algorithm** | Eliminates nuisance trips due to harmonics |
| **Minimum trip time <20 msec** | Reduces the risk of ventricular fibrillation for leakage current of 250 mA and above |
| **Fixed 6 mA (UL 943) or 20 mA (UL 943C) trip level** | UL Listed GFCI and Special-Purpose GFCI personnel protection for industrial and commercial loads up to 100 A (GFCI versions) |
| **Selectable trip levels 6–100 mA** | Settings below 20 mA provide extra safety. The settings above 20 mA can reduce nuisance tripping on systems with high-leakage current (EGFPD versions) |
| **Two-stage ground monitor with Zener termination that meets UL 943C, CSA M421** | Proactively protects from shock by tripping if continuity of ground wire between Industrial Shock Block and load is broken |
| **Flexible configuration** | Selectable manual reset or auto-reset for brownout, power-up, and ground monitor interruptions to fit plant safety protocols |
| **Conformal coating** | Internal PWB is conformally coated to protect against corrosion and moisture |
| **Auxiliary contact** | Alerts your SCADA system if the Shock Block is energized or tripped |
| **Automatic self-test** | The Shock Block will continuously test itself and will trip if there is an internal failure |
| **GFCI Class A, C, D, and EGFPD options in one series** | Simplified planning and operator familiarity for multiple applications/requirements |

## Applications

- For applications where people, electrical equipment, and water are present
- Agriculture
- Amusement parks
- Commercial kitchens
- Construction
- Food and beverage
- Horticultural lighting
- Maintenance shops
- Manufacturing
- Mining
- Oil and gas
- Swimming pools
- Vehicle service centers
- Wastewater facilities

## Specifications

| | |
|---|---|
| **Voltage Rating** | 208 V, 480 V, 600 V |
| **Current Rating** | 32, 60, 80, or 100 A |
| **System Type** | Three-phase, 3-wire (no neutral), 60 Hz; Single-phase, 2-wire (no neutral), 60 Hz; Single-phase, 3-wire (with neutral), 60 Hz for EGFPD versions only |
| **Short-Circuit Current Rating** | 10,000 A (for SB5032 and SB5060); 50,000A (for SB5080 and SB5100) |
| **Trip Level Settings** | Fixed at 6 mA (Class A models); Fixed at 20 mA (Class C/D models)<br>Selectable 6, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100 mA (EGFPD models) |
| **Trip Time Setting** | Inverse time curve according to UL 943 |
| **Ground Monitoring Circuit** | Selectable short or Zener termination; Fail-safe; CSA M421 compliant |
| **Enclosure** | IP 69K and NEMA 4X (Outdoor), Polycarbonate, Lockable |
| **Operating Temperature** | -35 °C (-31 °F) to 40 °C (104 °F), up to 66 °C (151 °F) with derating |
| **Dimensions** | **H** 285.6 mm (11.25 in.); **W** 244.4 mm (9.62 in.); **D** 119.6 mm (4.71 in.) – for 32 A and 60 A<br>**H** 383.4 mm (15.09 in.); **W** 327.1 mm (12.88 in.); **D** 137.4 mm (5.5 in.) – for 80 A and 100 A |

## Accessories

- **1N5339B Termination Device:** Axial-lead ground-check termination, included with SB5000 series
- **SE-TA6 Termination Assembly:** Optional termination assembly with terminals and mounting holes
- **SE-TA6-SM Stud-Mount Termination Assembly:** Optional ground-check termination for submersible pumps
- **SE-TA6ASF-WL Series Termination Assembly:** Compact 12 W ground-check termination assembly


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## Certification & Compliance

| | |
|---|---|
| **UL Listed** (all models) | UL1998 |
| **CSA** (SB5032, SB5060 models) | LR 53428 |
| **cULus Listed** | Class A GFCI (UL 943) E330856<br>EGFPD (UL 943/UL 1053) E359574 |
| **UL Listed** | Class C, D SPGFCI (UL 943C) E352763 |

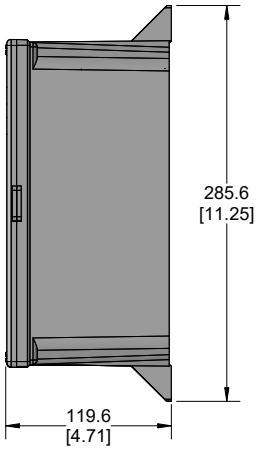
## Ordering Information

| ORDERING NUMBER | LOAD RATING (A) | VOLTAGE (V) | TRIP LEVEL (MA) | UL CLASS | ENCLOSURE |
|---|---|---|---|---|---|
| SB5032-001-0 | 32 | 208 | 20 (Fixed) | UL 943C Class C SPGFCI | NEMA 4X, IP69K |
| SB5032-201-0 | | 480 | | | |
| SB5032-301-0 | | 600 | | UL 943C Class D SPGFCI | |
| SB5032-011-0 | | 208 | 6, 10–100 in increments of 10 (Selectable) | UL 943 / UL 1053 EGFPD | |
| SB5032-211-0 | | 480 | | | |
| SB5032-311-0 | | 600 | | | |
| SB5032-021-0 | | 208 | 6 (Fixed) | UL 943 Class A GFCI | |
| SB5060-001-0 | 60 | 208 | 20 (Fixed) | UL 943C Class C SPGFCI | |
| SB5060-201-0 | | 480 | | | |
| SB5060-301-0 | | 600 | | UL 943C Class D SPGFCI | |
| SB5060-011-0 | | 208 | 6, 10–100 in increments of 10 (Selectable) | UL 943 / UL 1053 EGFPD | |
| SB5060-211-0 | | 480 | | | |
| SB5060-311-0 | | 600 | | | |
| SB5060-021-0 | | 208 | 6 (Fixed) | UL 943 Class A GFCI | |
| SB5080-001-0 | 80 | 208 | 20 (Fixed) | UL 943C Class C SPGFCI | |
| SB5080-201-0 | | 480 | | | |
| SB5080-301-0 | | 600 | | UL 943C Class D SPGFCI | |
| SB5080-011-0 | | 208 | 6, 10–100 in increments of 10 (Selectable) | UL 943 / UL 1053 EGFPD | |
| SB5080-211-0 | | 480 | | | |
| SB5080-311-0 | | 600 | | | |
| SB5080-021-0 | | 208 | 6 (Fixed) | UL 943 Class A GFCI | |
| SB5100-001-0 | 100 | 208 | 20 (Fixed) | UL 943C Class C SPGFCI | |
| SB5100-201-0 | | 480 | | | |
| SB5100-301-0 | | 600 | | UL 943C Class D SPGFCI | |
| SB5100-011-0 | | 208 | 6, 10–100 in increments of 10 (Selectable) | UL 943 / UL 1053 EGFPD | |
| SB5100-211-0 | | 480 | | | |
| SB5100-311-0 | | 600 | | | |
| SB5100-021-0 | | 208 | 6 (Fixed) | UL 943 Class A GFCI | |


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## Dimensions Millimeters [inches]

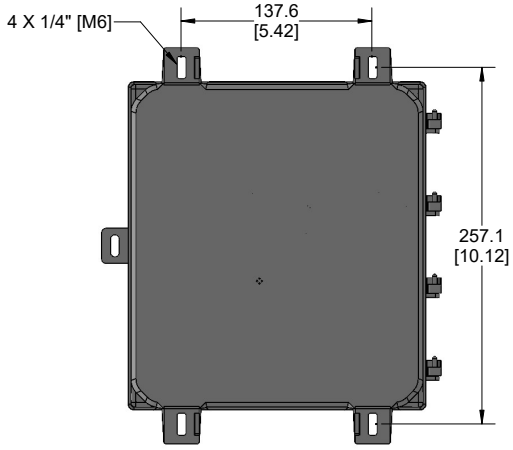
### SB5060




SIDE

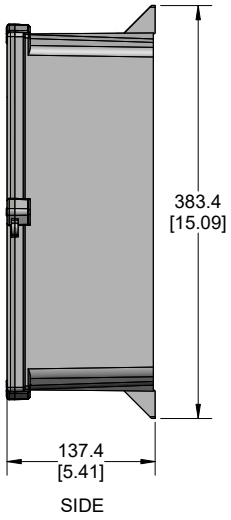



FRONT




REAR
(MOUNTING DETAIL)

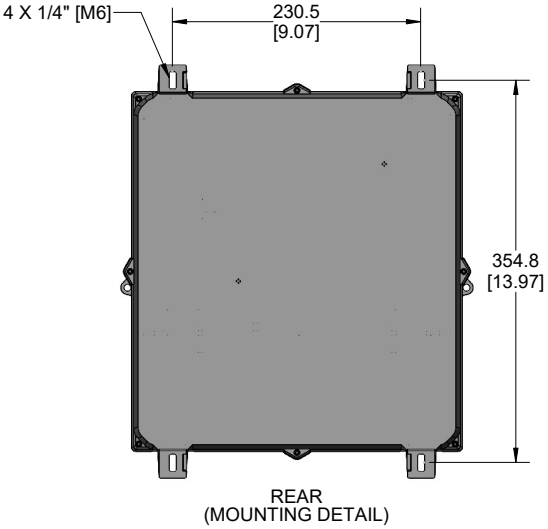
### SB5100




SIDE



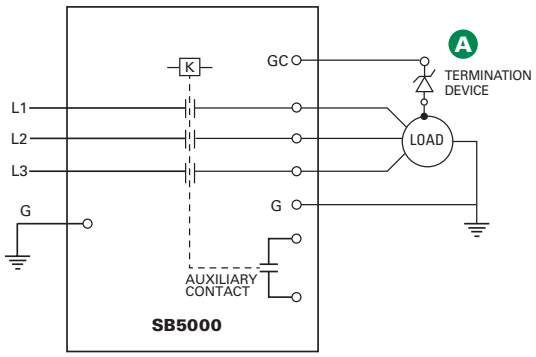

FRONT




REAR
(MOUNTING DETAIL)


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## Simplified Circuit Diagram




## Connection Diagram

The SB5000 is installed in-line between incoming power or existing overcurrent protection device and the load.





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