Jectse SGM1-250Z/2300

Jectse DC 500V 160A 20kA Moulded Case Circuit Breaker SGM1-250Z/2300 User Manual

Model: SGM1-250Z/2300

1. Introduction

This manual provides essential instructions for the safe and effective installation, operation, and maintenance of the Jectse DC 500V 160A 20kA Moulded Case Circuit Breaker, Model SGM1-250Z/2300. This device is designed to protect DC power lines from damage caused by overcurrent due to overload or short circuit conditions. It is suitable for various low-voltage DC power and distribution applications, including photovoltaic solar energy systems, wind power generation systems, and hydropower.

2. Safety Information

WARNING: Installation and maintenance should only be performed by qualified personnel. Failure to follow these instructions may result in electric shock, fire, or serious injury.

- Always disconnect power before installing or servicing the circuit breaker.
- Ensure proper grounding according to local electrical codes.
- Do not operate the circuit breaker if it appears damaged.
- Verify voltage and current ratings match your application requirements.
- Use appropriate personal protective equipment (PPE) when working with electrical systems.

3. Product Overview

The Jectse SGM1-250Z/2300 is a 2-pole moulded case circuit breaker designed for DC applications. It features a robust BMC thermosetting plastic construction and provides protection against short circuits and overloads.


LINE
1
3
ON
ON
I
OFF
SGM1-250Z/2300
In: 160A
Ics=75% Icu
Ue Icu
DC500V⎓20kA
IEC 60947-2
GB 14048.2
PUSH TO TRIP
2
4
LOAD

Figure 3.1: Front view of the Jectse DC Circuit Breaker, showing the ON/OFF switch and product label with specifications like 160A, DC 500V, and 20kA breaking capacity.

Figure 3.2: Angled view of the Jectse DC Circuit Breaker, highlighting its compact design and terminal connections.

4. Specifications

Feature	Specification
Model	SGM1-250Z/2300
Material	BMC Thermosetting Plastic
Rated Current (In)	160A
Rated Voltage (Ue)	DC 500V
Breaking Capacity	20kA
Number of Poles	2
Mounting Type	DIN Rail Mount (typical for this type of breaker)

Feature	Specification
Item Weight	3.36 pounds (approx. 1.52 kg)
Dimensions	6.93 x 4.88 x 4.33 inches (approx. 17.6 x 12.4 x 11 cm)

5. Setup and Installation

Follow these steps for proper installation of the circuit breaker:

1. **Preparation:** Ensure all power to the installation area is disconnected and verified as off. Gather necessary tools (e.g., screwdrivers, wire strippers, multimeter).
2. **Mounting:** Install the circuit breaker securely within a suitable distribution box or enclosure. The recommended installation method for 2-pole configurations is vertical mounting.
3. **Wiring:** Connect the DC power lines to the circuit breaker terminals. The recommended wiring configuration is "Top in and Bottom out Wiring". Ensure all connections are tight and secure to prevent loose contacts and overheating.

Figure 5.1: Close-up view of the circuit breaker terminals, showing the connection points for DC power lines.

4. **Verification:** After wiring, double-check all connections for correctness and tightness. Use a multimeter to verify proper voltage and continuity before restoring power.

6. Operation

The circuit breaker features a simple ON/OFF toggle switch for operation.

- **To Turn ON:** Push the toggle switch to the "ON" position (typically indicated by a green or upward position). This connects the circuit.
- **To Turn OFF:** Push the toggle switch to the "OFF" position (typically indicated by a red or downward position). This disconnects the circuit.
- **Automatic Trip:** In the event of an overload or short circuit, the breaker will automatically trip to the "OFF" position to protect the circuit. Before resetting, identify and resolve the cause of the trip.
- **Resetting:** After an automatic trip, ensure the fault is cleared. Then, firmly push the toggle switch to the "OFF" position first, and then to the "ON" position to reset the breaker.

Figure 6.1: The circuit breaker's toggle switch in the "ON" position, indicating power flow.

7. Maintenance

Regular maintenance helps ensure the longevity and reliable operation of your circuit breaker.

- **Periodic Inspection:** Visually inspect the circuit breaker and its connections periodically for any signs of damage, discoloration, loose wires, or overheating.
- **Cleaning:** Keep the circuit breaker free from dust and debris. Use a dry, non-conductive cloth for cleaning. Do not use liquids or abrasive cleaners.
- **Testing:** It is recommended to periodically test the trip mechanism by pressing the "PUSH TO TRIP" button (if present) or by simulating an overload condition under controlled circumstances, if qualified to do so.
- **Tighten Connections:** Periodically check and tighten all terminal connections to prevent resistance buildup and potential fire hazards.

8. Troubleshooting

Problem	Possible Cause	Solution
Circuit breaker trips frequently.	Overload, short circuit, or faulty appliance/wiring.	Disconnect loads and identify the source of the overload or short circuit. Repair or replace faulty components. Do not repeatedly reset without addressing the cause.
Circuit breaker does not reset.	Persistent fault (overload/short circuit) or internal damage to the breaker.	Ensure the fault is cleared. If it still doesn't reset, the breaker may be damaged and requires replacement.
No power to the circuit, but breaker is ON.	Loose connection, wiring fault, or upstream power issue.	Check all wiring connections. Verify power supply to the breaker. Consult a qualified electrician if the issue persists.

9. Warranty and Support

Specific warranty information for this Jectse product is not provided in the available data. Please refer to the retailer or manufacturer's official website for detailed warranty terms and conditions.
For technical support or inquiries, please contact Jectse customer service through their official channels. You can often find contact information on the product packaging or the Jectse brand store on Amazon.
Jectse Store Link: Jectse Official Store