Product datasheet

Version: 03/03/2026

Albright - SW200N-51 - 250A DC contactor

Reference : ALB-SW200N51-48V-250A-12V

Options :

No variants

3D Model : Available

EAN-13 :

The SW200N-51 is a single-pole normally-open (SPST NO) double-break DC contactor designed for low-voltage DC buses. It is used as a main line contactor to energise and isolate a traction DC bus or a DC power distribution, with a 12V continuous-duty coil. The “switching on load” versus “continuous service” distinction is key to sizing the duty cycle, limiting terminal heating and keeping contact resistance stable over time.

Overview

- Function: energise/isolate a DC bus (main line contactor).
- Contacts: SPST NO, double-break main contacts.
- Power terminals: M10 studs for lugs or copper busbars.
- Coil drive: 12V continuous-duty coil, drivable in DC or via PWM depending on strategy.

System integration

- Typical role: main line contactor between battery, DC distribution and inverter/loads.
- Duty sizing: 250A for load switching; 400A for continuous service with infrequent switching.
- Coil drive: implement a suitable power stage (MOSFET/driver) and a transient strategy aligned with your safety logic.
- PWM drive: can reduce coil heating and audible noise, but requires control of frequency, filtering and EMC behaviour.

Technical specifications

Type	SPST NO double-break DC contactor
Contact voltage (N version)	48 V DC (recommended switching voltage)
Current	250A (switching) / 400A (continuous service)
Breaking capacity (fault)	1500A at 48 V DC
Terminals	Power: M10 studs; coil: 6.3 mm spade
Typical timings	Pull-in ~40 ms; drop-out ~10 ms (no suppression)
Ambient	-40 °C to +60 °C

Installation

- Mounting: horizontal or vertical; in vertical orientation, M10 studs should ideally point upwards.
- Stacked lugs: for multiple feeders, use a busbar/distribution plate to reduce hotspots and loosening risk.
- Connection order: keep high-current conductors closest to the seating surface, and add harness strain relief.
- Load validation: measure terminal temperature rise and voltage drop after thermal stabilisation.

Limits & best practices

- Avoid repeated switching near the limits: duty cycle strongly impacts contact resistance and terminal heating.
- Coil suppression: flyback diode vs diode+resistor (or a suitable network) changes release time; choose based on safe shutdown requirements.
- PWM coil noise: if audible buzzing occurs, tune frequency/filtering and ensure adequate pull-in current then stable hold current.

Wiring & EMC

- Separate power wiring from coil wiring; minimise loop inductance on the DC bus.
- Coil harness: clean return path, short wiring, and transient protection aligned with the architecture.
- In inverter/PWM environments: grounding strategy, loop control and on-system EMC validation prevent resets and control glitches.

Diagnostics & end-of-life

- Contact resistance: trend voltage drop under stable current (same measurement points, same load) to detect drift.
- Hotspots: periodic inspection of lugs, torque retention, oxidation and thermal marks.
- Real duty cycle: lifetime strongly depends on the number of load switchings and transient severity.

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