

855AWP-1A-C2 30A power relay

Category: Electronic

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Focus Keyphrase: Song Chuan 855AWP-1A-C2 12V DC 30A Power Relay Technical Specifications and HVAC Applications

SEO Title: Mbsm.pro, Song Chuan 855AWP-1A-C2, 12V DC, 30A, Power Relay, 240VAC, SPST-NO, High Current Control

Meta Description: Discover the technical depth of the Song Chuan 855AWP-1A-C2 30A power relay. This guide covers its 12V DC coil specifications, wiring schematics, and high-performance industrial applications.

Slug: song-chuan-855awp-1a-c2-12v-30a-power-relay-specs

Tags: Song Chuan, 855AWP-1A-C2, Power Relay, 12VDC Relay, 30A Relay, Mbsmgroup, Mbsm.pro, mbsmpro.com, mbsm, HVAC Controls, Electronic Components, Industrial Switching, PCB Relay

Excerpt: The Song Chuan 855AWP-1A-C2 is a high-performance 30A power relay designed for demanding electrical environments requiring robust 12V DC coil actuation. Primarily used in HVAC systems and heavy-duty industrial controls, this relay ensures reliable switching for loads up to 240VAC. This comprehensive guide provides essential technical insights, wiring configurations, and engineering advice for professionals.

Mbsmpro.com, Relay, Song Chuan, 855AWP-1A-C2, 12VDC, 30A, 240VAC, SPST-NO, Power Switching, HVAC, PCB Mount

In the realm of power electronics and industrial automation, the reliability of a switching component determines the longevity of the entire system. The **Song Chuan 855AWP-1A-C2** stands as a benchmark for high-current PCB relays. Engineered for heavy-duty applications, this 30A power relay is a critical component for technicians and engineers dealing with heating, ventilation, air conditioning (HVAC), and automotive power management.

Technical Core and Engineering Excellence

The **855AWP series** is specifically designed to handle high inrush currents. The “1A” designation indicates a **Single Pole Single Throw - Normally Open (SPST-NO)** contact arrangement. This means the circuit remains open until the 12V DC coil is energized, making it ideal for safety-critical “start-up” sequences in motors and compressors.

Key Technical Specifications

Feature	Specification Details
Manufacturer	Song Chuan (Xong Chuan)
Model Number	855AWP-1A-C2
Coil Voltage	12V DC
Contact Rating	30A @ 240V AC / 30A @ 30V DC
Contact Material	Silver Tin Oxide (AgSnO)
Configuration	1 Form A (Normally Open)
Termination	PCB Terminals with Quick Connect options
Operating Temperature	-40°C to +85°C
Dielectric Strength	2,500V AC (between coil and contacts)

Internal Schematic and Wiring Logic

Understanding the internal architecture is vital for proper PCB layout and field replacement. The **855AWP-1A-C2** features a simple but robust internal mechanism.

- Coil Terminals (Control Side):** These are the two pins that receive the 12V DC signal. When energized, the electromagnetic field pulls the armature to close the load circuit.
- Load Terminals (Switch Side):** These high-gauge terminals handle the 30A current. In most industrial applications, these are reinforced to prevent *pitting* and *arcing*.

<u>Expert Engineering Tip: When switching inductive loads (like a fan motor or a compressor), always use a **flyback diode** (e.g., 1N4007) across the DC coil to prevent back-EMF voltage spikes that could damage your control circuit.

Comparative Analysis: 30A vs. Standard 10A Relays

Field workers often ask if a standard relay can be substituted. The answer is usually no. The **855AWP-1A-C2** offers significantly different thermal management.

Parameter	Standard General Purpose Relay	Song Chuan 855AWP-1A-C2
Max Current	10A - 15A	30A
Contact Resistance	Moderate	Ultra-Low (to prevent heat)
Expected Life (Mechanical)	1,000,000 cycles	10,000,000 cycles
Typical Use	Light lighting/Signals	Compressors / Industrial Heaters

<u>Industrial Applications and Best Practices</u>

This relay is a “workhorse” found in various sectors. Its ability to switch high AC voltages with a low DC control signal makes it indispensable.

- **HVAC Systems:** Controlling the outdoor condenser fan or the auxiliary heating element.
- **Power Supplies:** Serving as the main disconnect for high-wattage UPS systems.
- **Automotive Aftermarket:** Managing high-power light bars, winches, or specialized cooling fans.
- **Industrial Automation:** Acting as an interface between a low-power PLC output and a heavy motor starter.

Engineer’s Notice & Safety Advice

- **Avoid Overloading:** While rated for 30A, running at the absolute limit for extended periods generates heat. For continuous loads (running 3+ hours), it is best practice to derate the relay to 24A (80% rule).
- **Check Soldering Integrity:** Because this component carries high current, cold solder joints on a PCB can cause high resistance, leading to the relay melting the board itself. Use high-quality solder and ensure the traces are thick enough for 30A.
- **Environment:** The “C2” rating indicates a flux-tight construction. However, in extremely dusty or humid environments, ensure the relay is housed in an appropriately rated NEMA enclosure.

Technical Resources and Data Links

For deep technical integration, we recommend reviewing the manufacturer’s original data sheets to verify timing diagrams and vibration resistance.

- **Official Catalog:** Song Chuan Power Relay Series (855AWP PDF) (*Note: External link, verify security upon clicking*).
- **Cross-Reference Guide:** Many technicians use Omron or TE Connectivity equivalents; however, the pinout of the 855AWP-1A-C2 is specific to its high-current capability.

Summary for Field Technicians: If you encounter a failure in a 12V control board managing a heavy compressor, the **Song Chuan 855AWP-1A-C2** is your most reliable replacement choice. Its high dielectric strength and silver tin oxide contacts ensure that it will withstand the rigors of thousands of cycles without contact welding.

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