

ABB ACS550-01-012A-4+B055

ABB ACS550-01-012A-4+B055 Frequency Converter User Manual

Model: ACS550-01-012A-4+B055

1. INTRODUCTION

This manual provides essential information for the safe and efficient installation, operation, and maintenance of the ABB ACS550-01-012A-4+B055 Frequency Converter. This device is designed to control the speed and torque of AC induction motors, offering precise control and energy efficiency for various industrial applications. Please read this manual thoroughly before attempting any installation or operation.

2. SAFETY INFORMATION

WARNING: Electrical shock hazard. Only qualified personnel should install, operate, or service this equipment. Disconnect all power before working on the drive.

- Always follow local and national electrical codes.
- Ensure proper grounding of the drive and motor.
- Do not touch electrical components when power is applied.
- Verify that the input voltage matches the drive's specifications.
- Protect against accidental startup.

3. SETUP AND INSTALLATION

Proper installation is critical for the performance and longevity of the frequency converter. Ensure the mounting location is clean, dry, well-ventilated, and free from excessive vibration or corrosive substances.

3.1. Mounting

Mount the drive vertically on a flat, non-flammable surface. Allow sufficient clearance for cooling air circulation above and below the unit. Use appropriate fasteners to secure the drive firmly.



Figure 1: ABB ACS550-01-012A-4+B055 Frequency Converter. This image shows the front and side view of the white-cased frequency converter, highlighting its control panel and mounting brackets. A yellow warning triangle is visible on the lower front panel.

3.2. Electrical Connections

All wiring must comply with local electrical codes and the drive's specifications. Use appropriate wire gauges and torque settings for all terminals.

1. **Power Input (L1, L2, L3):** Connect the 480 V AC three-phase power supply to the designated input terminals.
2. **Motor Connection (U, V, W):** Connect the motor leads to the output terminals. Ensure correct phase sequence.
3. **Grounding (PE):** Connect the protective earth ground to the PE terminal.
4. **Control Wiring:** Connect control signals (e.g., start/stop, speed reference, fault relays) to the control terminals as per your application requirements. Refer to the detailed wiring diagrams in the complete product manual for specific terminal assignments.

4. OPERATING INSTRUCTIONS

The ACS550-01-012A-4+B055 features an intuitive control panel for local operation and parameter adjustment.

4.1. Control Panel Overview

The control panel typically includes a display, navigation buttons (up, down, left, right), an Enter button, and a Start/Stop button. The display shows operational data, parameter values, and fault messages.

4.2. Basic Operation

- **Power On:** After verifying all connections, apply main power to the drive. The control panel will illuminate.
- **Start:** Press the green START button on the control panel or activate the external start command. The motor will accelerate to the set speed.
- **Stop:** Press the red STOP button on the control panel or activate the external stop command. The motor will decelerate and stop.

- **Speed Adjustment:** Use the UP/DOWN navigation buttons to adjust the motor speed if operating in local control mode.

4.3. Parameter Settings

The drive's behavior is configured through various parameters. Access the parameter menu via the control panel to adjust settings such as motor data, acceleration/deceleration times, and control modes. Refer to the comprehensive ABB ACS550 User's Manual for a complete list and description of all parameters.

5. MAINTENANCE

Regular maintenance ensures optimal performance and extends the lifespan of the frequency converter.

- **Cleaning:** Keep the drive clean and free from dust and debris. Use a soft, dry cloth. Do not use solvents.
- **Cooling Fans:** Periodically check cooling fans for proper operation and clean any accumulated dust. Replace fans if they become noisy or stop working.
- **Connections:** Annually inspect all electrical connections for tightness. Loose connections can cause overheating and drive failure.
- **Capacitors:** Electrolytic capacitors have a finite lifespan. Consider professional inspection or replacement after 5-10 years of continuous operation, depending on environmental conditions.

6. TROUBLESHOOTING

This section provides guidance for common issues. For complex problems, contact ABB technical support.

Symptom/Fault Code	Possible Cause	Corrective Action
Drive does not power on	No input power; Blown fuse	Check main power supply; Inspect and replace fuses if necessary (after disconnecting power).
Motor does not start	External start command not active; Parameter settings incorrect; Motor wiring error	Verify control wiring; Check parameter group 10 (Start/Stop); Inspect motor connections.
Overcurrent fault (e.g., F0001)	Motor overload; Short circuit in motor or cables; Rapid acceleration	Reduce motor load; Check motor and cables for damage; Increase acceleration time (parameter 2202).
Overvoltage fault (e.g., F0003)	High input voltage; Rapid deceleration; Regenerative load	Check input voltage; Increase deceleration time (parameter 2203); Consider braking resistor if regenerative load is present.

7. SPECIFICATIONS

Key technical specifications for the ABB ACS550-01-012A-4+B055 Frequency Converter:

- **Model:** ACS550-01-012A-4+B055
- **Manufacturer Part Number:** 3AUA0000004230
- **Input Voltage:** 480 V AC
- **Output Power:** 5.5 kW (5500 Watts)

- **Output Current:** 12 A
- **Brand:** ABB

8. SUPPORT

For further assistance, technical inquiries, or service, please contact ABB customer support. Refer to the official ABB website for contact information and additional resources, including detailed product manuals and software tools.

ABB Official Website: www.abb.com