Schneider Electric ATV320 Series

Instruction Manual: Variable Speed Drive, Altivar Machine ATV320 Series

Model: ATV320 Series | Brand: Schneider Electric

1. Introduction

This manual provides essential information for the safe and efficient installation, operation, and maintenance of the Schneider Electric Altivar Machine ATV320 Series Variable Speed Drive. This device is designed to control the speed of three-phase asynchronous and synchronous motors in various industrial applications, offering precise control and energy efficiency.

2. Safety Information

DANGER: Risk of electric shock. This equipment contains high voltage. Only qualified personnel should perform installation, maintenance, and troubleshooting. Disconnect all power before working on the drive.
WARNING: The motor can start unexpectedly. Ensure proper lockout/tagout procedures are followed. Read and understand all instructions before proceeding.

- Always follow local and national electrical codes.
- Ensure proper grounding of the drive and motor.
- Do not operate the drive with damaged components.
- Protect the drive from moisture, dust, and corrosive environments.

3. Setup and Installation

3.1. Unpacking and Inspection

Carefully unpack the drive and inspect it for any signs of damage during transit. Report any damage to the carrier immediately. Verify that all components listed in the packing list are present.

3.2. Mounting

Mount the ATV320 drive vertically on a flat, stable surface, ensuring adequate clearance for ventilation. Maintain a minimum of 50mm (2 inches) clearance above and below the unit for proper airflow. Use appropriate screws and mounting hardware suitable for the drive's weight.

3.3. Wiring

All wiring must be performed by a qualified electrician in accordance with local and national electrical codes.

- **Power Wiring:** Connect the three-phase AC input (L1, L2, L3) to the designated terminals. Ensure the voltage matches the drive's specifications (380-500 Vac).
- **Motor Wiring:** Connect the motor phases (U, V, W) to the drive's output terminals. Ensure correct phase rotation.
- **Grounding:** Connect the protective earth (PE) terminal of the drive to a reliable ground point.
- **Control Wiring:** Connect control signals (e.g., start/stop, speed reference, fault reset) to the appropriate digital and analog input terminals. Refer to the wiring diagram provided with the drive for specific terminal assignments.

Figure 1: Front view of the Altivar Machine ATV320 Series Variable Speed Drive, showing the control panel with LED display, navigation buttons, and warning labels. The drive features a compact, grey enclosure with ventilation grilles on the sides.

3.4. Initial Power-Up

Before applying power, double-check all wiring connections. Apply power to the drive. The LED display on the control panel should illuminate. Follow the drive's quick start guide or parameter manual for initial configuration and motor auto-

tuning.

4. Operating Instructions

4.1. Control Panel Overview

The ATV320 features an integrated control panel with a 4-digit, 7-segment LED display and navigation buttons (ESC, OK, Up, Down, Left, Right) for parameter setting and monitoring. A green rotary knob is typically used for local speed reference.

4.2. Basic Operation

- **Start/Stop:** The drive can be started and stopped via digital inputs, serial communication, or the local control panel.
- **Speed Control:** Speed reference can be set via analog input (e.g., 0-10V, 4-20mA), serial communication, or the local potentiometer/buttons.
- **Monitoring:** The display shows various parameters such as motor speed (Hz or RPM), output current, output voltage, and fault codes.

4.3. Parameter Settings

Access the parameter menu using the navigation buttons. Key parameters include:

- Motor nominal voltage, current, frequency, and speed.
- Acceleration and deceleration ramps.
- Minimum and maximum output frequencies.
- Control mode (e.g., V/F, Sensorless Vector Control).
- Digital input and output assignments.

5. Maintenance

Regular maintenance ensures optimal performance and extends the lifespan of the drive. Always disconnect power before performing any maintenance.

- **Cleaning:** Periodically clean the drive's heat sinks and ventilation openings to prevent dust accumulation, which can impede cooling. Use compressed air or a soft brush.
- **Connections:** Check all electrical connections for tightness and signs of corrosion. Retighten as necessary.
- **Environmental Check:** Ensure the operating environment remains within specified temperature and humidity limits.
- **Fan Replacement:** Cooling fans have a finite lifespan. Inspect fans for proper operation and replace them if they become noisy or stop working. Refer to the drive's specific service manual for fan replacement procedures.

6. Troubleshooting

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

Symptom/Error Code	Possible Cause	Solution
Drive does not power on	No input power; Blown fuse; Internal fault	Check power supply; Replace fuses; Contact support

Symptom/Error Code	Possible Cause	Solution
"OCF" (Overcurrent Fault)	Motor short circuit; Motor overloaded; Rapid acceleration	Check motor wiring; Reduce load; Increase acceleration time
"OHF" (Overheat Fault)	Insufficient ventilation; High ambient temperature; Dirty heat sink	Ensure proper airflow; Reduce ambient temp; Clean heat sink
Motor not running	No run command; Incorrect speed reference; Motor wiring error	Verify run command; Check speed reference signal; Inspect motor wiring

7. Specifications

Parameter	Value
Product Type	Variable Speed Drive
Series	Altivar Machine ATV320 Series
Power Rating	550 W
Input Voltage	380 to 500 Vac
Phase	Three Phase
Manufacturer	SCHNEIDER ELECTRIC
ASIN	B07696K7WB
Date First Available	September 12, 2021

8. Warranty and Support

For information regarding product warranty, technical support, or service, please refer to the official Schneider Electric website or contact their customer service department. Keep your purchase receipt and product serial number handy for any inquiries.

Official Schneider Electric Website: www.se.com