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Danfoss 134U2978

# Danfoss FC280 Inverter Drive Instruction Manual

Model: 134U2978

## 1. INTRODUCTION

This manual provides essential information for the safe and efficient operation, installation, and maintenance of the Danfoss FC280 Inverter Drive, model 134U2978. The FC280 is a versatile frequency converter designed for precise motor control in various industrial applications.

The Danfoss FC280 Inverter Drive is engineered to deliver reliable performance for controlling 3-phase AC motors, offering advanced features for energy efficiency and process optimization.

## 2. SAFETY INFORMATION

**WARNING: Read all safety instructions carefully before installation, operation, or maintenance. Failure to comply may result in serious injury or death, and/or equipment damage.**

- Only qualified personnel should install, operate, and maintain this equipment.
- Ensure the main power supply is disconnected and locked out before performing any work on the drive or motor.
- Verify proper grounding of the drive and motor.
- Do not touch electrical components when power is applied.
- Protect the drive from moisture, dust, and extreme temperatures.
- Observe all local and national electrical codes.

## 3. PRODUCT FEATURES

The Danfoss FC280 Inverter Drive (Model 134U2978) offers a range of features designed for robust performance and control:

- Output Frequency Range: 0 to 500 Hz
- Power Output: 0.55 KW
- Input Phase: 3-Phase
- Input Voltage: 400V
- Compact design for space-saving installation.
- Integrated RFI filter for reduced electromagnetic interference.

- User-friendly control panel for easy parameter setup and monitoring.



Figure 3.1: Front view of the Danfoss FC280 Inverter Drive, showing the control panel and VLT Midi Drive branding.

## 4. INSTALLATION

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### 4.1 Mounting

The FC280 drive should be mounted vertically on a flat, stable surface in an environment that meets the specified operating conditions (temperature, humidity, ventilation). Ensure adequate clearance around the unit for proper airflow and heat dissipation.

- Mount the drive in an upright position.
- Allow at least 10 cm (4 inches) of free space above and below the unit for ventilation.
- Use appropriate screws and mounting hardware suitable for the drive's weight and the mounting surface.

### 4.2 Wiring

All wiring must be performed by a qualified electrician in accordance with local and national electrical codes. Incorrect wiring can cause damage to the drive, motor, or pose a safety hazard.

1. **Power Wiring:** Connect the 3-phase 400V AC input power to the L1, L2, L3 terminals. Ensure correct phase sequence.
2. **Motor Wiring:** Connect the motor leads to the U, V, W output terminals.
3. **Grounding:** Connect the protective earth (PE) terminal of the drive to a reliable ground point.
4. **Control Wiring:** Connect control signals (e.g., start/stop, speed reference) to the appropriate control terminals as per your application requirements. Refer to the detailed wiring diagrams in the full product manual for specific terminal assignments.

## 5. INITIAL SETUP AND CONFIGURATION

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After successful installation and wiring, the drive requires initial setup. The FC280 features a user-friendly control panel for parameter adjustment.

- Power On:** Apply main power to the drive. The display on the control panel should illuminate.
- Basic Parameter Setting:**
  - Navigate through the menu using the arrow keys.
  - Set motor nominal voltage (e.g., 400V).
  - Set motor nominal current.
  - Set motor nominal frequency (e.g., 50Hz or 60Hz).
  - Set motor nominal speed.
  - Configure acceleration and deceleration ramps.
- Motor Auto-Tune (Optional but Recommended):** For optimal performance, perform a motor auto-tune function if available in the drive's menu. This process measures motor parameters and optimizes the drive's control algorithms.
- Save Settings:** Ensure all configured parameters are saved before exiting the setup menu.

## 6. OPERATING INSTRUCTIONS

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The Danfoss FC280 Inverter Drive can be operated via its local control panel or external control signals.

### 6.1 Local Operation (Control Panel)

- **Start/Stop:** Press the **ON** button to start the motor and the **OFF** button to stop it.
- **Speed Adjustment:** Use the **Up** and **Down** arrow keys to adjust the output frequency (motor speed).
- **Monitoring:** The display shows various operating parameters such as output frequency, motor current, and DC link voltage. Use the navigation buttons to cycle through display modes.

### 6.2 Remote Operation

For remote control, the drive can accept signals from external sources such as PLCs, potentiometers, or other control devices connected to its control terminals. Refer to the detailed wiring and parameter settings for remote control in the comprehensive product manual.

## 7. MAINTENANCE

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Regular maintenance ensures the longevity and reliable operation of your Danfoss FC280 Inverter Drive. Always disconnect power before performing any maintenance.

- **Cleaning:** Periodically clean the drive's exterior and ventilation openings to prevent dust accumulation, which can impede cooling. Use a soft, dry cloth. Do not use liquid cleaners.
- **Fan Inspection:** Check cooling fans for proper operation and cleanliness. Replace fans if they are noisy or not functioning correctly.
- **Terminal Tightness:** Annually check the tightness of all electrical connections to prevent loose contacts and overheating.
- **Environmental Check:** Ensure the operating environment remains within specified temperature and humidity limits.

## 8. TROUBLESHOOTING

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This section provides general guidance for common issues. For detailed fault codes and advanced troubleshooting, refer to the complete Danfoss FC280 manual.

Problem	Possible Cause	Solution
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Problem	Possible Cause	Solution
Drive does not power on.	No input power; Blown fuse; Incorrect wiring.	Check power supply; Inspect fuses; Verify wiring connections.
Motor does not run.	Drive in fault state; Incorrect parameters; No start command.	Check drive display for fault codes; Verify motor parameters; Ensure start command is active.
Overcurrent fault.	Motor overload; Short circuit in motor/cables; Incorrect motor parameters.	Reduce load; Check motor and cables for damage; Verify motor parameters.
Overvoltage fault.	High input voltage; Regenerative braking without braking resistor.	Check input voltage; Consider adding a braking resistor if applicable.

## 9. TECHNICAL SPECIFICATIONS

Parameter	Value
Model Number	134U2978
Product Series	FC280 (VLT Midi Drive)
Output Frequency Range	0 - 500 Hz
Output Power	0.55 KW
Input Phase	3-Phase
Input Voltage	400V
Product Dimensions (L x W x H)	16 x 11 x 16 inches
Weight	6.55 Pounds
Manufacturer	DANFOSS
ASIN	B0828YM3DF

## 10. WARRANTY AND SUPPORT

For detailed warranty information, please refer to the official Danfoss warranty statement provided with your product or visit the official Danfoss website. Warranty terms may vary based on region and purchase date.

For technical support, service, or spare parts, please contact your authorized Danfoss distributor or visit the Danfoss support portal. When contacting support, please have your product model number (134U2978) and serial number readily available.

Official Danfoss Website: [www.danfoss.com](http://www.danfoss.com)

## Related Documents - 134U2978

	<p><b><a href="#">VLT® Micro Drive FC 51 Operating Guide</a></b></p> <p>Comprehensive operating guide for the Danfoss VLT® Micro Drive FC 51, covering installation, wiring, parameter settings, and operation. Includes technical specifications and safety information for industrial applications.</p>
	<p><b><a href="#">Danfoss iC2-Micro: Compact, Flexible, and Convenient AC Drive Selection Guide</a></b></p> <p>Explore the Danfoss iC2-Micro AC drive, a versatile solution offering compact design, high performance, and user-friendly operation. Learn about its features, applications, digital tools like MyDrive Suite, and life cycle services for industrial use.</p>
	<p><b><a href="#">VFD Motor Guide: Variable Frequency Drives for AC Motors   Precision Electric, Inc.</a></b></p> <p>Comprehensive guide to Variable Frequency Drives (VFDs) for AC motors, covering operation, benefits like energy savings and process control, technical considerations, applications, and manufacturer selection tips from Precision Electric, Inc.</p>
	<p><b><a href="#">VLT® Refrigeration Drive FC 103: Руководство по проектированию</a></b></p> <p>Руководство по проектированию VLT® Refrigeration Drive FC 103 от Danfoss, содержащее техническую информацию и рекомендации для инженеров по интеграции привода в системы управления и мониторинга.</p>
	<p><b><a href="#">VLT® HVAC Drive FC 131 Operating Guide - Danfoss</a></b></p> <p>Comprehensive operating guide for the Danfoss VLT® HVAC Drive FC 131, covering safe installation, commissioning, programming, specifications, and troubleshooting for HVAC applications. Learn about features, safety, and technical details.</p>
	<p><b><a href="#">VLT® HVAC Basic Drive FC 101 Operating Guide - Installation and Programming</a></b></p> <p>Comprehensive operating guide for the Danfoss VLT® HVAC Basic Drive FC 101, covering installation, safety, programming, troubleshooting, and specifications. Learn how to install and commission this AC drive for HVAC applications.</p>