

Preface

Thank you for choosing DELTA's high-performance VFD-S Series. VFD-S Series are manufactured by adopting high-quality components, material and incorporating the latest microprocessor technology available.

Getting Started

This manual will be helpful in the installation, parameter setting, troubleshooting, and daily maintenance of the AC motor drives. To guarantee safe operation of the equipment, read the following safety guidelines before connecting power to the AC motor drives. Keep this operating manual handy and distribute to all users for reference.



WARNING










-  Always read this manual thoroughly before using VFD-S series AC Motor Drives.
-  **DANGER!** AC input power must be disconnected before any maintenance. Do not connect or disconnect wires and connectors while power is applied to the circuit. Maintenance must be performed by qualified technicians.
-  **CAUTION!** There are highly sensitive MOS components on the printed circuit boards. These components are especially sensitive to static electricity. To avoid damage to these components, do not touch these components or the circuit boards with metal objects or your bare hands.
-  **DANGER!** A charge may still remain in the DC-link capacitor with hazardous voltages even if the power has been turned off. To avoid personal injury, please ensure that power has turned off before operating AC drive and wait ten minutes for capacitors to discharge to safe voltage levels.
-  **CAUTION!** Ground the VFD-S using the ground terminal. The grounding method must comply with the laws of the country where the AC drive is to be installed. Refer to Basic Wiring Diagram (Chapter 3).
-  **CAUTION!** The final enclosures of the AC drive must comply with EN50178. (Live parts shall be arranged in enclosures or located behind barriers that meet at least the requirements of the Protective Type IP20. The top surface of the enclosures or barrier that is easily accessible shall meet at least the requirements of the Protective Type IP40). (VFD-S series corresponds with this regulation.)
-  **CAUTION!** The rated voltage of power system that is installed on AC drive must be equal to or less than 240 Volts (460V model is 480 Volts) and the current must be equal to or less than 5000A RMS.
-  **DANGER!** The AC drive may be destroyed beyond repair if incorrect cables are connected to the input/output terminals. Never connect the AC drive output terminals U/T1, V/T2, and W/T3 directly to the AC main circuit power supply.
-  **CAUTION!** Heat sink may heat up over 70°C (158°F), during the operation. Do not touch the heat sink.

TABLE OF CONTENTS

CHAPTER 1 RECEIVING AND INSPECTION

1.1 Nameplate Information	1 - 1
1.2 Model Explanation	1 - 1
1.3 Serial Number Explanation	1 - 1

CHAPTER 2 STORAGE AND INSTALLATION

2.1 Storage	2 - 1
2.2 Ambient Conditions	2 - 1
2.3 Installation	2 - 2
2.4 Connections	2 - 3
2.5 Environment	2 - 4
2.6 Installation Steps	2 - 4

CHAPTER 3 WIRING

3.1 Basic Wiring Diagram	3 - 1
3.2 External Wiring	3 - 4
3.3 Main Circuit Wiring	3 - 5
3.4 Control Terminal Wiring	3 - 6
3.5 Wiring Notes	3 - 7
3.6 Motor Operation Precautions	3 - 9

CHAPTER 4 DIGITAL KEYPAD OPERATION

4.1 Description of Digital Keypad	4 - 1
4.2 Explanation of Displayed Messages	4 - 2
4.3 Explanation of LED Indicators	4 - 3
4.4 Keypad Operation	4 - 4

CHAPTER 5 DESCRIPTION OF PARAMETER SETTINGS

5.1 Group 0: User Parameters	5 - 1
5.2 Group 1: Basic Parameters	5 - 5
5.3 Group 2: Operating Method Parameters	5-12
5.4 Group 3: Output Function Parameters	5-16
5.5 Group 4: Input Function Parameters	5-20
5.6 Group 5: Multi-Step Speed and PLC (Programmable Logic Control) Parameters	5-31
5.7 Group 6: Protection Parameters.....	5-37
5.8 Group 7: Motor Parameters.....	5-41
5.9 Group 8: Special Parameters	5-42
5.10 Group 9: Communication Parameters	5-46
5.11 Group A: PID Parameters	5-61

CHAPTER 6 MAINTENANCE AND INSPECTIONS

6.1 Periodic Inspection	6 - 1
6.2 Periodic Maintenance	6 - 1

CHAPTER 7 TROUBLESHOOTING AND FAULT INFORMATION

CHAPTER 8 SUMMARY OF PARAMETER SETTINGS

APPENDIX A STANDARD SPECIFICATIONS

APPENDIX B ACCESSORIES

B.1 Non-fused Circuit Breaker and Fuse Specification Chart	B - 1
B.2 Braking Resistors & Braking Units	B - 2
B.3 EMI Filter.....	B - 4
B.4 Din Rail	B - 9

B.5 Remote Controller RC-01..... B-10

B.6 Conduit Bracket B-11

B.7 Zero Phase Reactor..... B-12

APPENDIX C DIMENSIONS.....C - 1

APPENDIX D EC DECLARATION OF CONFORMITY.....D - 1