

Content **1100 Flux Vector AC Drive**
(continued)

1. Physical layout of amplifier
2. Electrical installation and wiring
3. Keyboard and display functions including motor and display control keys, operator and parameter menus
4. Start-up including AC Test, ID, and Drive Test functions
5. Serial communication options including asynchronous, synchronous, and networking capability
6. Speed and torque control modes of operation, selectable voltage and current input configuration, starting and stopping control, direction control, acceleration and deceleration control, external parameter adjustment, asynchronous serial setup, and fault log
7. Drive faults and warnings
8. Manual tuning
9. Troubleshooting techniques and troubleshooting charts

Servo Theory

1. Two types of system orders including velocity and torque
2. Functional diagrams of system integration illustrating drive routine, vector control, PI loop, and other control blocks

Communication

1. Remote diagnostics
2. Wiring configurations for RS-422 and RS-485 communication
3. Synchronous communication options

UNICO—Worldwide

**Corporate
Headquarters**

UNICO, Inc.
3725 Nicholson Road
P. O. Box 0505
Franksville, Wisconsin
53126-0505
USA

voice: 262.886.5678
fax: 262.504.7396

www.unicous.com

United States

Novi, Michigan
248.380.7610

New Lenox, Illinois
815.485.5775

Sandy, Utah
801.501.7586

Canada

Mississauga,
Ontario
905.602.4677

South America

El Tigre, Venezuela
58.283.241.4024

Europe
Milton Keynes,
England
44.1908.260000

Wilnsdorf, Germany
49.2739.303.0

Asia

Osaka, Japan
81.66.945.0077

Beijing, China
86.10.6218.6365





Objectives

1. To isolate and troubleshoot to the level of modular components
2. To understand serial communication options and uses
3. To understand software and hardware fault diagnostics
4. To locate important test points for direction to problem areas
5. To understand vector control terminology
6. To understand the options and applications of the drive

Content **AC Vector Control**

1. Typical servo drive diagram
2. Advantages and disadvantages of DC drives
3. Speed/torque curve of DC motors
4. Advantages and disadvantages of variable-frequency AC drives
5. Speed/torque curve of an AC induction motor with a variable-frequency AC drive
6. UNICO flux vector control
7. Speed/torque curve of an AC vector drive
8. Comparison of AC vector and DC servo drive systems
9. AC vector control versus DC control
10. Flux vector coordinate transformation
11. Block diagram of AC flux vector control
12. AC vector drive features
13. AC vector drive power conversion
14. Insulated gate bipolar transistors (IGBTs)
15. Digital current regulator
16. Digital signal processor (DSP)
17. Power factor comparison
18. Energy storage and sharing with PWM drives