Chapter 3

Overview

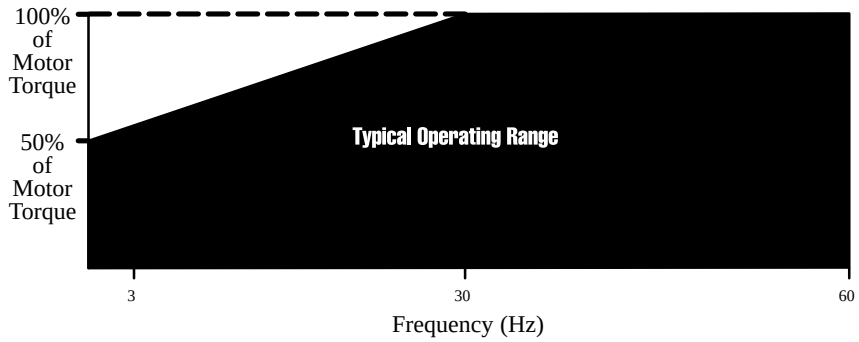
The 1336 is a microprocessor controlled, high performance, adjustable frequency drive designed to control three phase induction motors on critical industrial applications. The drive produces a three phase, PWM, adjustable frequency output to supply an adjustable motor speed. The drive output voltage is a function of output frequency and is adjustable to match motor parameters to obtain optimum motor performance.

To help achieve precise and repeatedly accurate control, setup and operation, the 1336 is digitally programmable. The drive may be programmed from a Local or Remote Control Panel or through the Serial Communication Port using optional devices.

Depending upon your configuration, various status and fault conditions are reported either through the Programming and Display Panel or through the Serial Communications Port. All fault diagnostics start with both load and drive self-check diagnostics each time the drive is powered up. While running, the drive continues to monitor potential fault conditions. To allow real-time preventive maintenance, parameters such as drive output current and control conditions can be monitored even while the drive is running. Should a fault occur, detailed diagnostic codes isolate the problem to identify the condition, allowing quick, corrective action to be taken to restore process control.

The 1336 is an AC adjustable frequency drive designed for use with a standard, three-phase induction motor. The standard control is designed as a constant torque, adjustable speed control with 150% overload capability and is adaptable through programming to handle a wide variety of applications.

The 1336 provides an exceptional output voltage and current waveform. Special considerations however, must be taken when applying an inverter to an existing motor. At slower speeds, cooling is not as effective due to reduced fan rotation. Extended operation at full load torque at slow speeds may damage the motor due to overheating.



Shown above is a typical curve plotting torque versus speed. At slow speeds, if torque requirements continuously exceed levels shown above (10 minutes or longer), a motor rated for the required speed and torque range must be used. To guard against mechanical problems, it is recommended that the entire drive train machinery be checked for various limitations due to the range of the Bulletin 1336.

ATTENTION: Motors may overheat when operated at rated torque for long periods of time below 50% base speed due to the decreased air flow of armature driven fans.

Motors may require special balancing if operated at more than 125% of base speed. Refer to the motor manufacturer for proper sizing of the motor for the intended application.

Chapter 4

Specifications

Operating Environment

Temperature:	Open rating (heat sink), 0 to + 40°C. Open rating (chassis components), 0 to +50°C. Enclosed rating (heat sink), 0 to + 40°C. Enclosed rating (chassis components), 0 to +50°C.
Relative Humidity:	5 to 95% non-condensing — all ratings.
Altitude:	3,300 feet (1,000 meters) maximum without derating.
Vibration:	0.006 inches (0.152 mm) displacement, 1G peak.
Shock:	15G peak for 11ms duration (±1.0mS).

Storage Environment

Temperature:	– 40 to +85°C — all ratings.
Relative Humidity:	5 to 95% non-condensing — all ratings.

Enclosure

Indicated by Catalog Number.

Open (IP00) — all ratings.

NEMA Type 1 (IP20) — all ratings.

NEMA Type 4 (IP56), B003-B030 & C003-C030.

NEMA Type 12 (IP54), B003-B200 & C003-C200.

Input Power Conditioning

General

Typically the 1336 is suitable for direct connection to a correct voltage, three phase, AC power line. There are however certain power line conditions which may introduce the possibility of drive input power component malfunction. To reduce the possibility of these malfunctions, a line reactor or isolation type transformer may be required.

The basic rules for determining if a line reactor or isolation type transformer is required are as follows:

1. If the AC line supplying the drive has power factor correction capacitors connected, an AC line reactor or isolation type transformer must be connected between the capacitor bank and the input to the drive.
2. If the AC line frequently experiences transient power interruptions or significant voltage spikes, an AC line reactor or isolation type transformer should be used.

Ungrounded Distribution Systems

All 1336 drives are equipped with an MOV (metal oxide varistor) that provides voltage surge protection and phase-to-phase plus phase-to-ground protection which is designed to meet IEEE 587. The MOV circuit is designed for surge suppression only (transient line protection), not continuous operation.

With ungrounded distribution systems, the phase-to-ground connection of the MOV could become a continuous current path to ground. MOV line-to-line and line-to-ground voltages should not exceed the values listed below. Exceeding these MOV ratings may cause physical damage to the MOV.

Line-to-Line MOV Rating
Energy Rating = 320 Joules Turn On Voltage = 850-1000 volts

Line-to-Ground MOV Rating
Energy Rating = 380 Joules Turn On Voltage = 1500 volts