3.2 Enclosure and Temperature Considerations

Enclosure Selection

An enclosure should provide the following features:

- Easy access to components.
- A common ground potential on the cabinet.
- A secure vertical panel or rails.
- Conformance to electrical standards.
- An electromagnetic shield, if needed to meet FCC or CE emission standards.
- Access restricted to authorized personnel only.
- Adequate cooling and heat dissipation.
- Protection from dust and dirt as required by the environment.

Mount the components in a dustproof and drip-tight enclosure, such as a NEMA enclosure. The enclosure must provide a minimum depth of 10 inches (254 mm) from the panel to the inside surface of the enclosure door. The enclosure should be located so that the doors can be opened fully, permitting easy access to the controller, wiring, and components. If environmental conditions permit, a 19-inch rack may be used instead of a NEMA enclosure. Use either the 11-slot PPX:505–6511 or the 16-slot PPX:505–6516 base for 19-inch rack installations.

The SIMATIC 505/575 PLC Systems comply with the requirements of the EMC Directive 89/336/EEC when installed in accordance with the specifications in this manual and when installed in a grounded metal cabinet with tightly sealed doors. If Series 505 Remote I/O channel cables to remote bases are run outside the cabinet, they must either be run in a fully enclosed metal raceway or fitted with ferrite beads where they leave and/or enter the cabinets. Ferrites shall be Steward PN 28-A-2029-0 or equivalent.

Temperature Considerations

When preparing your installation, plan for an adequate air flow to ensure proper cooling of equipment. Do not permit the convection cooling of the controller to be hindered. Unless ambient temperatures are extremely high, a fan or air-conditioned cooling is unnecessary for keeping controllers below their maximum-rated operating temperature of 60°C, provided that the cabinet adequately dissipates heat.

For one local base and one remote base located in the bottom half of a 7-foot, 19-inch rack, you can place equipment that dissipates no more than 325 W in the top half, above the Series 505 bases, assuming a 25°C external ambient temperature. If you must exceed these guidelines, or if the base is not installed with the vent screens at top and bottom positions, use cooling equipment to lower the equipment temperature to the recommended level.