



# AC and DC Drives Applications

## ENVIRONMENTAL CONSIDERATIONS

### ENVIRONMENTAL CONSIDERATIONS

Knowing the environment a drive will operate in is just as important as any of the preceding considerations. Failure to consider the surroundings will result in a drive that does not operate correctly.

### MOTOR ENCLOSURES

The motor enclosure should be chosen for protection against the environment. A drip-proof motor is sufficient in a clean industrial or commercial atmosphere. For dirtier locations, totally enclosed motors are available. Many special enclosures are available to protect the motor in explosive atmospheres, corrosive atmospheres or other special locations.

### CONTROL ENCLOSURES

The control enclosure should also be chosen to protect the drive from its environment. The normal enclosure provided is a NEMA 1 ventilated enclosure. If necessary, a special enclosure, such as NEMA 12, can be provided.

### AMBIENT TEMPERATURE

When the surrounding or ambient air temperature rises above 104°F (40°C), the temperature of both motors and controls operating in this environment will rise above their normal maximum operating temperatures. This may result in equipment failure or reduced equipment life. When the temperature drops below 50°F (10°C) there may be other problems such as moisture condensation which may damage controls and motors.

### ALTITUDE

Reduced air density at higher altitudes results in poor heat transfer. The heat rise of both motors and controls increases. To counteract this greater heat rise, the normal horsepower rating of a given motor or controller must be derated.