MOTOR ELECTRICAL PROTECTION

INTRODUCTION

Electrical supply, while generally very reliable, is subject to influences that can result in inadequately protected motors being damaged.

As the heart of the motor is the windings, they need to be protected from failure.

During normal operation, thermal, mechanical and electrical stresses can be encountered by motors.

POSSIBLE PROBLEMS

Refer to pages *N-10* to *N-16,* Fan Trouble Shooting, for a list of possible problems and solutions.

PROTECTION DEVICES

There are motor protective devices available which detect a range of abnormal conditions and automatically switch off the motor.

Different protective devices and the conditions they protect are:-

Fuses

- short circuit between phases or earth
- high current overload

Thermal Overload Relays

- current overload
- start-up problems
- stalling
- phase imbalance (three-phase motors)
- over-temperature
- phase loss (single-phasing of three-phase motors)
- under-voltage
- incorrect phase sequences (three-phase motors)

Thermistors and Thermal Contacts

- over-temperature of the windings

WARRANTY

Note that warranty is void if the thermal contacts are not used.

AS/NZS3000:2007 wiring rules state that motors required to run unattended shall be fitted with over-temperature devices such as thermal overload relays. If this is not complied with, warranty will be void.

A licensed electrical contractor or engineer, experienced in motor protection, should be engaged to assess the motors and specific requirements of the installation.

© FANTECH 2024