

MOTIVE MOTORS PROTECTION

Protections must be chosen based on the specific running conditions, according to standards EN 60204-1

External protections

- Protection against overloads. A thermal cut-out relay, which automatically controls a knife switch.
- Protection against peak currents by magnetic relay that controls an automatic knife switch, or by fuses; these must be set to the locked rotor current.

If the application requires, protection against excessive speed of the electric motor, for example if the mechanical load may drive the electric motor itself and thereby create a hazardous situation.

- If special conditions or synchronised operation with other machines or parts of machines require it, protection against power failures or dips by means of a minimum voltage relay that controls an automatic power knife switch.

Inner thermal overload cut-out switches (per CEI 2-3/IEC 34-1)

The electrical protections on the motor power line may not be sufficient to protect against overloads. If the cooling conditions worsen, the motor overheats but the electrical conditions do not change, which inhibits line protections. Installing built-in protections on the windings solves this problem:

● bimetallic device "PTO"

this is a normally-closed electromechanical device that opens when the threshold temperature is reached; it automatically resets when the temperature falls below the threshold level. Bimetallic devices are available with various intervention temperatures and without automatic reset, per EN 60204-1.



● PTC thermistor device



this device promptly, positively adjusts its resistance once the threshold temperature is reached.

Motors "Delphi Ex - II 3G Ex nA" and all motors from type 160 to type 355L are equipped with 3 PTC thermistors in the winding, with temperature intervention of 120-130°C in Class F motors (standard) (150-160°C in H Class motors, not delphi Ex)



Types 160-400
Cable gland for PTC

● PT100 device



this is a device that continuously, increasingly adjusts its resistance according to the temperature. It is useful for constant measuring of the winding temperature

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