



KLIXON | AC OFF-WINDING MOTOR PROTECTION

Non-Hermetic, Three-Phase Phenolics

PRODUCT OVERVIEW

The protector consists of a molded phenolic base assembly containing three heaters and a Klixon snap-acting thermal disc with three contacts. The Klixon disc is the neutral point of the motor. Each heater is in series with one of the phase windings of the motor, as well as with one of the contacts on the thermal disc. When the disc snaps open because of overheating, the neutral of the motor is open circuited, thereby shutting down the motor. Dual voltage motors are protected with a single protector, as shown in the wiring diagrams to the right.

Features & Benefits

Provides protection against overheating from running and stalled rotor conditions including:

- Single-phasing
- Plugging duty
- Stalling or failure to start
- Heavy overloads
- High ambient
- Ventilation failures

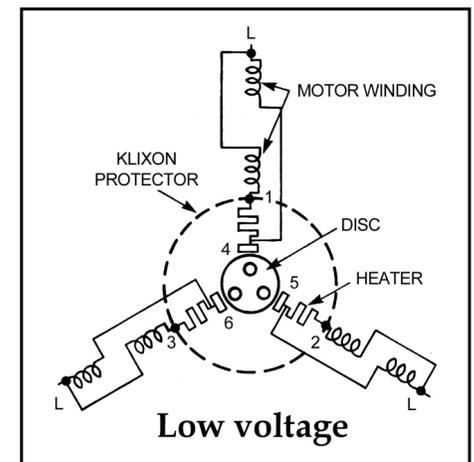
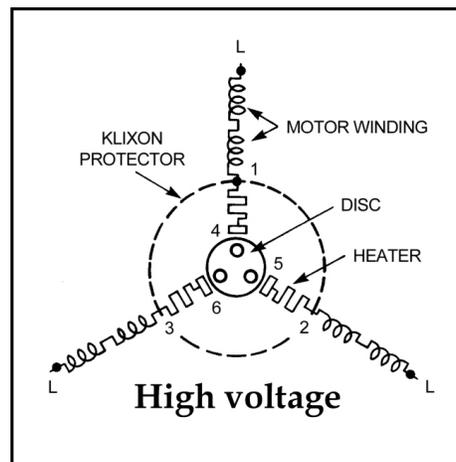
Mounting

The degree of protection obtained depends to a large extent on the protector location and its manner of mounting. The protector should be located in the motor so that it will receive the maximum amount of heating from the windings, not only for running, but also for stalled rotor conditions. The best location depends upon the construction of the motor. The protector could be located in be the air-shield, endbell or possibly the stator iron. Preferably, it should be in the discharge unit.

Engineering Samples

Provide the following information when requesting engineering samples:

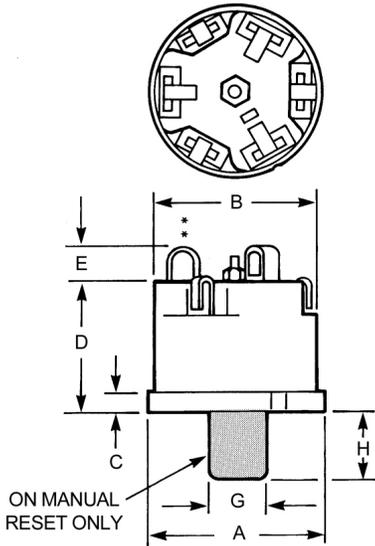
1. Motor Horsepower
2. Voltage: single or dual
3. Amperes necessary to raise the motor windings to a stable temperature condition of approximately 130°C for class A, 155°C for class B in 25 C room ambient.
4. The temperature of the protector location iron and the temperature of the protector location air when the motor is stable under above (3) conditions.
5. The locked rotor amperage and time for windings to reach 125°C and 150°C from a 25°C room ambient.
6. Voltage of test.
 - High voltage light load
 - Loss of refrigerant charge
 - Welded start relay
 - Shorted capacitor
 - Blocked condenser fan



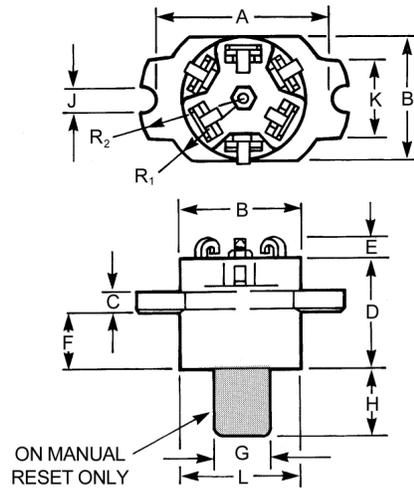
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Types MY, CY and BY



Types MW and CW



| Dim | MY | MW | CY | CW | BY |
|----------------|------------|------------|------------|------------|-------------|
| A | 1.031±.010 | 1.390±.015 | 1.312±.010 | 1.390±.015 | 1.640±.010 |
| B | .970±.006 | .970±.006 | 1.218±.010 | 1.218±.010 | 1.555±.010 |
| C | .125±.005 | .175±.010 | .125±.005 | .175±.010 | .156±.010 |
| D | .926±.010 | .896±.010 | .926±.010 | .926±.010 | 1.000±.010† |
| E max | .203 | .203 | .250 | | .312 |
| F | | .450±.015 | | .464±.015 | |
| G | .442±.006 | .442±.006 | .442±.006 | .442±.006 | .442±.006 |
| H | .437±.031 | 15/32 max. | .469±.031 | ½ max. | ½ max. |
| J | | .176±.010 | | .176±.010 | |
| K | | .625±.010 | | .625±.010 | |
| L | | .970±.006 | | 1.187±.010 | |
| R ₁ | | .656±.010 | | .656±.010 | |
| R ₂ | | .845±.010 | | .845±.010 | |

† 1.232 ±.010 for manual reset version.

Protector Types, Sizes and Estimated Horsepower Range

| Protector | Size | Horsepower | Voltage | Max Current | |
|-----------|------|------------|----------|-------------|------|
| | | | | 220V | 440V |
| MY | 3/4 | 1/8-1½ | 220/440V | 37 | 28 |
| MW | 3/4 | 1/8-1½ | 220/440V | 37 | 28 |
| CY | 1 | 1-3 | 220/440V | 60 | 45 |
| CW | 1 | 1-3 | 220/440V | 60 | 45 |
| BY | 1¼ | 2-7½ | 220/440V | 125 | 75 |

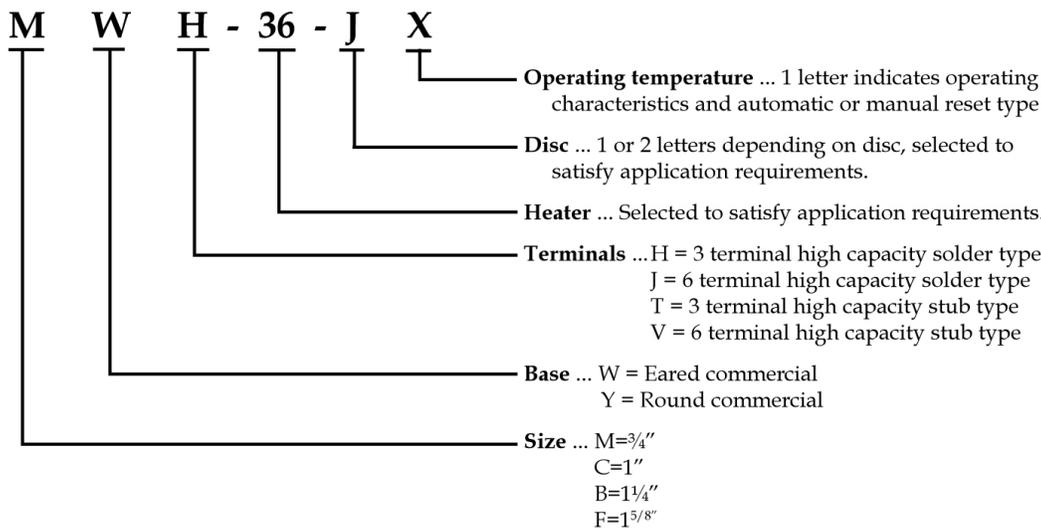
For dual voltage motors the higher voltage should be used for making the protector application and the lower voltage for selecting the size of the protector based on contact capacity. Because of the many various motor characteristics, a different size Klixon Protector than those indicated in the table above may be necessary for a given horsepower rating.

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Code Structure

The following "Sample Code" is an explanation of the type of code which appears on each Klixon three-phase protector. By using this code, it is possible to determine size, type of base, terminals, heater, disc and operating temperatures.



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