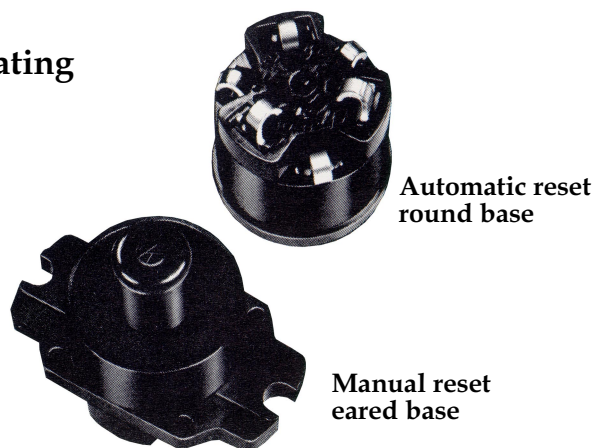**KLIXON**
®

# Thermal Protector from Texas Instruments
## Three-phase Manual or Automatic Reset Types MY, MW, CY, CW and BY

**Provides protection against overheating from all running and stalled rotor conditions including:**
- **Single-phasing**
- **Plugging duty**
- **Stalling or failure to start**
- **Heavy overloads**
- **High ambient**
- **Ventilation failures**

**Automatic reset round base**

**Manual reset eared base**

The protector consists of a molded phenolic bass 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 netural 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.

## 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 degree of protection obtained depends to a large extent on the protector location and its manner of mounting. The best location depends upon the construction of the motor; but in general, may be the air-sheild, end-

bell 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.
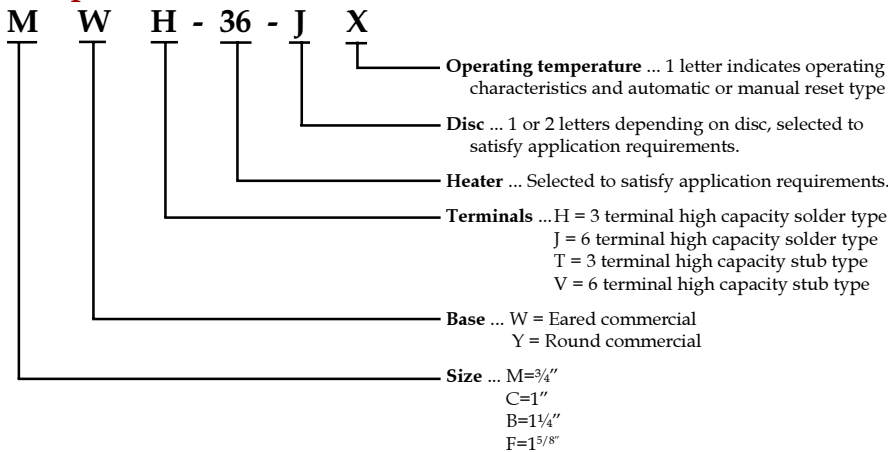6. Voltage of test.



**High voltage**



**Low voltage**
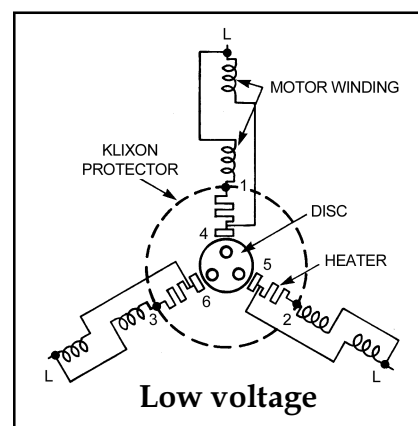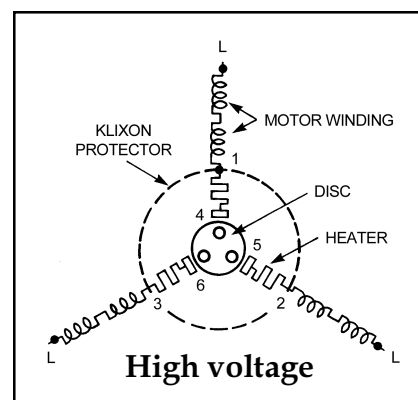
## Protector Types, Sizes and Estimated Horsepower Range

| Protector | Size | Horsepower | Voltage | Max Current 220V | Max Current 440V |
|---|---|---|---|---|---|
| MY | ¾ | 1/8-1½ | 220/440V | 37 | 28 |
| MW | ¾ | 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 int he table above may be necessary for a given horsepower rating.
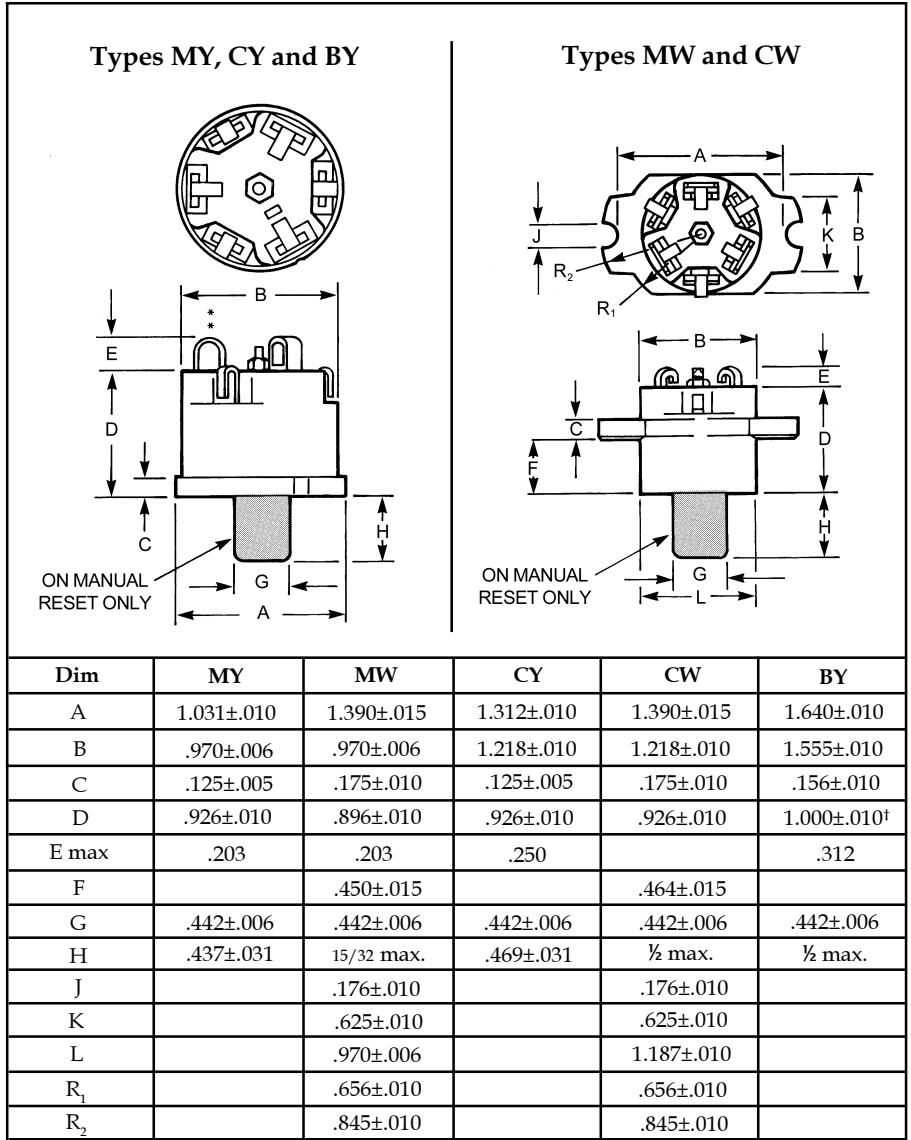
## Code Structure

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.

## Sample Code

**M W H - 36 - J X**

- **Operating temperature** ... 1 letter indicates operating characteristics and automatic or manual reset type
- **Disc** ... 1 or 2 letters depending on disc, selected to satisfy application requirements.
- **Heater** ... Selected to satisfy application requirements.
- **Terminals** ...H = 3 terminal high capacity solder type
  J = 6 terminal high capacity solder type
  T = 3 terminal high capacity stub type
  V = 6 terminal high capacity stub type
- **Base** ... W = Eared commercial
  Y = Round commercial
- **Size** ... M=¾"
  C=1"
  B=1¼"
  F=1⁵/₈"

## UL Recognized - File E15962

### Types MY, CY and BY



ON MANUAL RESET ONLY

### Types MW and CW



ON MANUAL RESET ONLY

| 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 | |
| R₁ | | .656±.010 | | .656±.010 | |
| R₂ | | .845±.010 | | .845±.010 | |

† 1.232 ±.010 for manual reset version.

For further information write or call:
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**Lighting & Industrial Marketing**
**34 Forest Street**
**Attleboro, MA 02703**
**Telephone: (508) 236-1937**

**TEXAS INSTRUMENTS**