

## Product Data

# Motor Winding Heater - Series B

(Bulletin 1410)

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### Description

The Bulletin 1410 Motor Winding Heater is intended for use with three-phase AC motors to guard against damage caused by condensation build-up on motor windings, which can occur in high humidity environments during motor idle periods. ***This device is not intended to be used to "dry out" damp motors.***

The Bulletin 1410 Motor Winding Heater is designed for use with three-phase AC squirrel cage motors controlled by full voltage starters. In applications other than across the line starters it is generally necessary to use an isolating contactor.

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### Solid State

When the Bulletin 1410 is energized, an SCR controlled voltage is applied to two terminals of the motor. The heat thus produced is evenly distributed in the motor, since the three phases are wound in proximity to each other. The factory-set output voltage of the motor winding heater is designed to maintain a 5-10°C differential above the ambient temperature, effectively guarding against condensation.

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### Double Fused

The SCR is protected against overcurrents by a fast-acting semiconductor fuse. In addition, a time delay fuse provides protection for the wiring between the starter and motor winding heater.

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**Automatic Operation**

The motor winding heater is connected in parallel with two contacts of the motor starter (see Figure 1). It is automatically energized after the starter contacts open (motor off), and automatically deenergized when the starter contacts close (motor running).

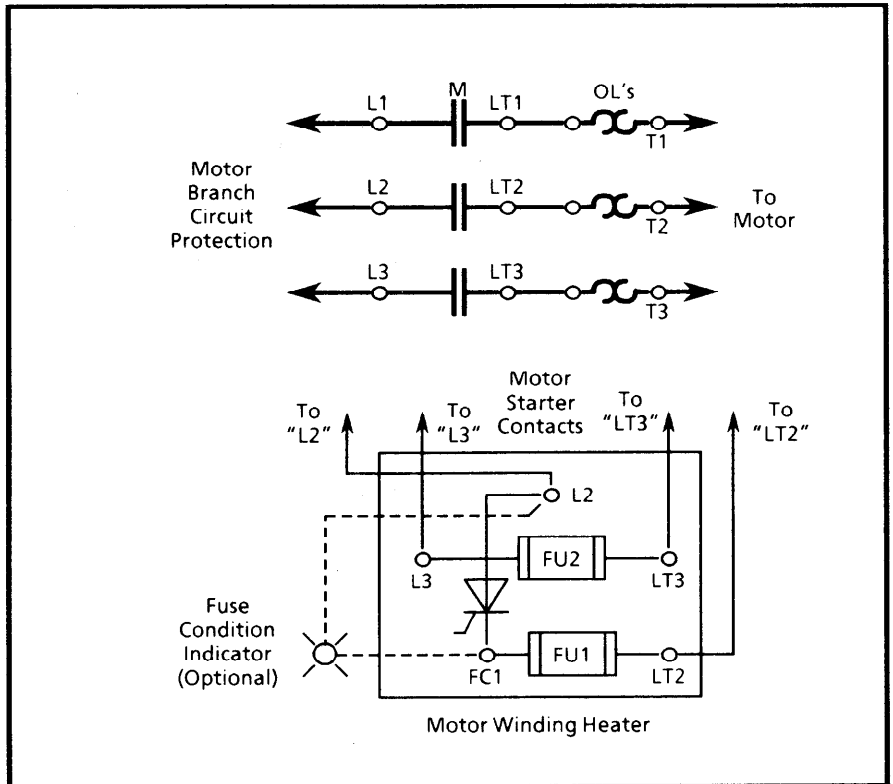
**Fuse Condition Indicator**

If desired, a customer-supplied pilot light (fuse condition indicator) can be connected to visually monitor the condition of the fuses. The pilot light should have a line voltage rating. For 460V and 575V applications, it is recommended that a transformer pilot be used. A Bulletin 800T pilot light is a good choice. With the starter contacts open, the light will be ON, indicating that both FU1 and FU2 are intact.

**No Adjustments**

Simply mount the compact motor winding heater in the motor starter enclosure, make four wiring connections, and the unit is ready to operate.

**Figure 1**  
Connection Diagram



**Mounting**

Units are designed for mounting within the customer's starter enclosure or some other suitable enclosure. The motor winding heater can be mounted in any position, except with the printed circuit board up. Crimp-type wiring lugs are included to aid in making connections to Allen-Bradley motor starter terminals.

**Specifications****Voltage and Horsepower Ratings:**

Catalog Number	Motor Voltage + 10%, -15% 3-Phase, 60 Hz	Motor Horsepower Range	Typical True RMS Output Current for Max. HP
1410-EOA47	230V	15 - 50 hp	18
1410-EOB50	460V	25 - 100 hp	18
1410-EOC50	575V	25 - 100 hp	15
1410-FOA50	230V	50 - 100 hp	36
1410-FOB54	460V	100- 200 hp	36
1410-FOC54	575V	100 - 200 hp	30
1410-GOA54	230V	100 - 200 hp	72
1410-GOB59	460V	200 - 400 hp	72
1410-GOC59	575V	200 - 400 hp	60
1410-HOA57	230V	200 - 300 hp	108
1410-HOB62	460V	400 - 600 hp	108
1410-HOC62	575V	400 - 600 hp	90

**Output Voltage Regulation:**

Voltage applied to motor winding will vary  $\pm 5\%$  maximum for line voltage variations of + 10%, -15%.

**Temperature Range:**

Operating: 0°C to + 50°C

Storage: -25°C to + 85°C

**Fusing:**

- FU1 - Fast-acting semiconductor fuse for SCR overcurrent protection.
- FU2 - Protection for wiring between starter and motor winding heater. Class RK-5 rejection type fuse with time delay.

**Additional SCR Protection:**

Metal oxide varistor protects against voltage transients. RC snubber circuit limits rate of change of circuit voltage.

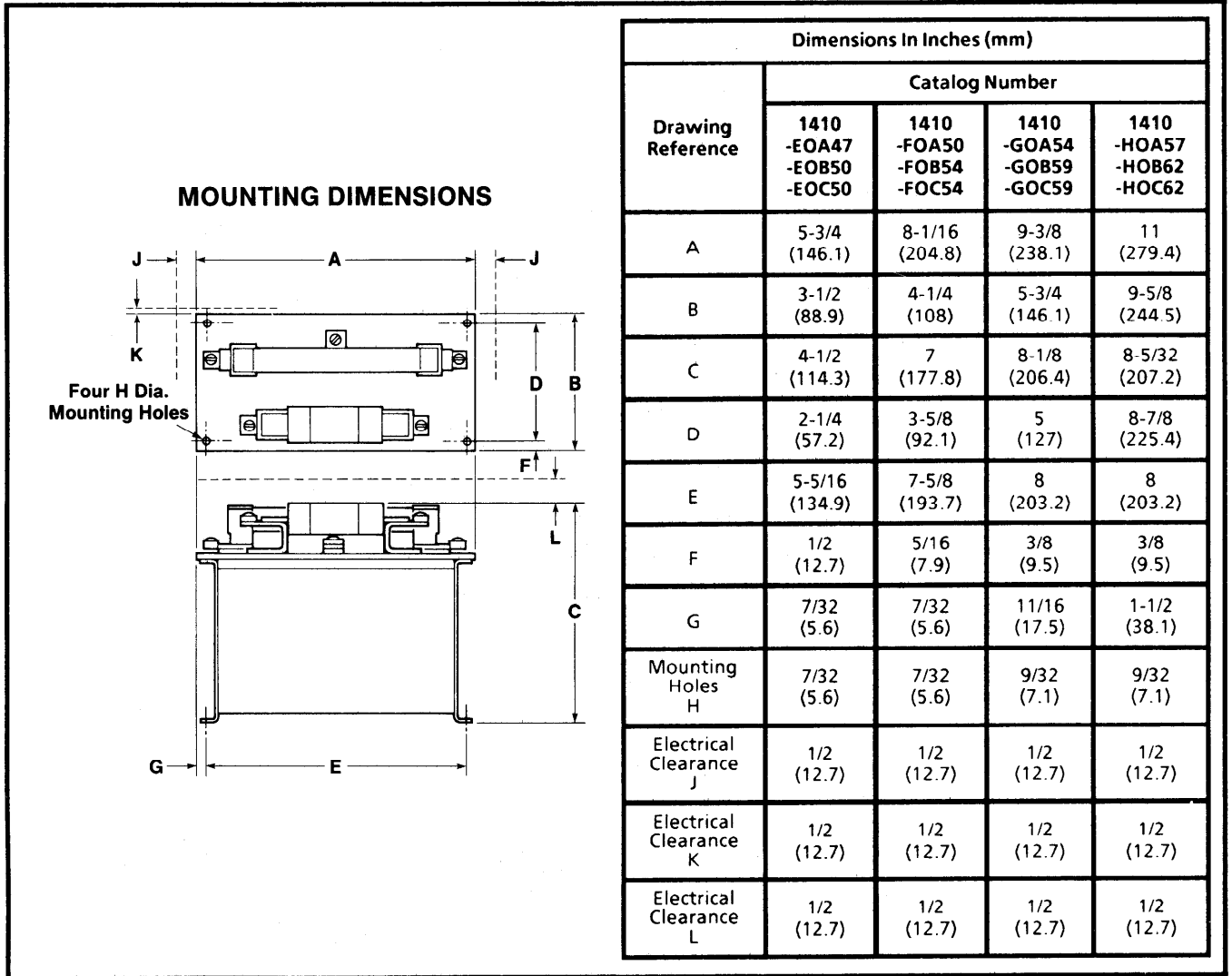
**True RMS Output Current:**

Approximately 15% of full load current

**Power Delivered to the Motor:**

Approximately 1 to 3 watts / hp.

### Mounting Dimensions



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