

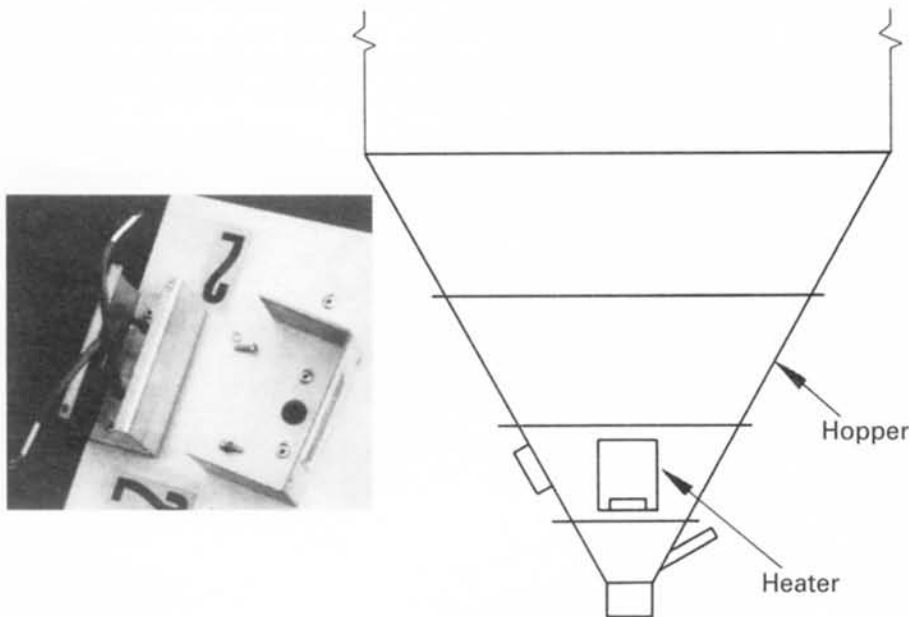
# Chromalox®

## Installation and Operating Instructions

### SERVICE REFERENCE

DIV. 4	SEC. FSRM	NUMBER 3001A
SALES REFERENCE		PB406
161-562300-001		
DATE	June, 1993	

## Type FSRM Module Hopper Heater



Type FSRM Module Heater  
Mounted on Hopper

### GENERAL

**DANGER:** This heater is not intended for use in hazardous atmospheres where flammable vapors, gases, liquids, or other combustible atmospheres are present as defined in the National Electric code. Failure to comply can result in explosion or fire.

Chromalox type FSRM Module Hopper Heaters are manufactured of formed 3/8" diameter alloy tubular elements mounted on steel angle frame and aluminized steel sheet reflective encasements.

Terminals of the heaters are protected against moisture and have extended high temperature insulated leads.

When properly installed and energized on rated voltage, heaters will provide long life at operating temperature of 250°F to 300°F. Heaters designed to withstand upset conditions where temperature in the hopper may be as high as 750°F (399°C).

### INSTALLATION

**DANGER:** Hazard of electric shock. Disconnect all power before installing heater.

1. Before installing the type FSRM heater inspect it thoroughly for possible damage which may have occurred during shipment. Also check to insure that the line voltage is the same as that stamped on the heater nameplate.
2. Heaters shall be mounted in the desired location on the hopper.
3. Position module heaters on hopper mounted studs (by others) with elements toward the hopper.

Secure the heater to the hopper wall (hardware by others). Heaters must be secure to avoid loosening from vibration that may occur during operation of the hopper.

**4. DANGER: Hazard of fire - Since the heaters are capable of developing high temperatures, extreme care should be taken to:**

- a. Avoid contact between heaters and combustible materials.
- b. Keep combustible materials far enough away to be free of the effects of high temperature.

## WIRING

**Note:** Electrical wiring to heater must be installed in accordance with the National Electrical Code and with local codes.

**WARNING: Hazard of electrical shock. Any Installation involving electric heaters must be grounded to earth to eliminate shock hazard.**

1. Connect heater according to the voltage and frequency specified on the nameplate.
2. Heaters and temperature of the hopper should be controlled with a thermostat. Thermostat and heaters must be wired in accordance with instructions provided with the thermostats.

3. If load amperage or voltage rating exceeds thermostat rating, a contactor must be used.

**WARNING: Users should install adequate back-up controls and safety devices with their electric heating equipment. Where the consequences of failure may be severe, back-up controls are essential. Although the safety of the installation is the responsibility of the user, Chromalox will be glad to make equipment recommendations.**

## OPERATION

1. Do not operate heaters at voltages in excess of that stamped on the heater since excess voltage will shorten heater life.
2. Do not operate heaters under conditions that result in temperatures higher than the recommended maximum since excess temperatures can cause premature heater failure.

3. Set thermostat to desired temperature. Depending on job specifications the hopper will come up to temperature in the time allowed. The thermostat will then cycle the heaters to maintain hopper temperature at the thermostat set point.

## MAINTENANCE

**WARNING: Hazard of severe shock. Disconnect all power to heaters before servicing or replacing heaters.**

1. Periodically check all electrical connections and tighten if necessary.

2. If heater fails to heat:
  - a. Check for power to heater.
  - b. Check for open-circuited elements. **NOTE:** Elements are not replaceable. If elements are open-circuited, replace heater.

*The warranty below has been drafted to comply with the new Federal Law applicable to products manufactured after December 31, 1976. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. The warranty in no manner reduces the coverage provided to you under the warranty it replaces.*

**Chromalox Warranty:** Chromalox industrial products are warranted against defects in workmanship and materials. NO OTHER WARRANTIES, WRITTEN OR ORAL, INCLUDING, BUT NOT LIMITED TO, WARRANTIES OF MERCHANTABILITY AND WARRANTIES FOR A PARTICULAR PURPOSE, APPLY. No Person is authorized to give any other warranty or assume any other liability except by written statement from an officer of the Wiegand Industrial Division, Emerson Electric Co.

**Warranty Period:** This warranty extends for twelve months from the date of shipment from factory or authorized distributor.

**Limitations:** Products must be installed and maintained in accordance with Chromalox instructions. Users are responsible for the suitability of the products to their application.

There is no warranty against damage resulting from corrosion, misapplication, improper specification or other operating conditions beyond our control. Claims against carriers for damage in transit must be filed by the buyer.

**Remedy:** Return the defective part or product, freight prepaid, to the location designated by Chromalox Product Service. All such items must be accompanied by a Material Return Authorization. This form, which includes a tear-out mailing and identification label, should be obtained from your local Chromalox Sales Office.

Defective items will be repaired or replaced at our option. SUCH REPAIR OR REPLACEMENT IS THE EXCLUSIVE REMEDY AVAILABLE FROM WIEGAND INDUSTRIAL DIVISION, EMERSON ELECTRIC CO. WIEGAND IS NOT LIABLE FOR LABOR COSTS INCURRED IN REMOVAL, REINSTALLATION, OR UNAUTHORIZED REPAIR OF THE PRODUCT OR FOR DAMAGE OF ANY TYPE WHATSOEVER, INCLUDING INCIDENTAL OR CONSEQUENTIAL DAMAGE. Some states do not allow the exclusion of limitations of incidental or consequential damages, so the preceding limitation or exclusion may not apply to you.

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