



U.S. Department  
of Transportation  
**Research and  
Special Programs  
Administration**

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Washington, D.C. 20590

SEP 29 2003

Mr. Lawrence W. Bierlein  
McCarthy, Sweeney & Harkaway, P.C.  
Suite 600  
2175 K Street, N.W.  
Washington, D.C. 20037

Ref. No. 03-0167

Dear Mr. Bierlein:

This responds to your June 23, 2003, letter requesting clarification on the applicability of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) to capillary tube thermostats produced by Therm-O-Disc, a division of Emerson Electric. Specifically, you ask for concurrence that these thermostats containing a small amount of flammable liquid charging material, sealed within each control, and packaged as described, are not regulated under the HMR.

According to your letter, these thermostats are used in baseboard heater applications. Expansion and contraction of the charging fluid in a fine tube, under varying temperatures, exerts pressure on a bellows diaphragm located in the metal cup. This activates the switching of the control.

These thermostat controls are manufactured in various temperature control ranges and tube lengths. The lower temperature-rated controls utilize methanol and water as a charging mixture that is drawn into the small copper tubing during manufacture. Fluid volumes are very small, with the least material holding approximately 1 milliliter of charging liquid, and up to 4.4 milliliters in the largest version. The entire unit is hermetically sealed under vacuum.

The units are packed in a fiberboard carton with 200-400 units per carton, each separated from the others in an egg-crate style inner packaging configuration, with a solid fiberboard divider separating the layers within the carton. Each control is physically separated from the other controls on all six sides. The units are sealed and do not leak. If one were broken, capillary action would tend to hold the small amount of charging fluid inside the control.

Under § 173.22, it is the shipper's responsibility to properly class and describe a hazardous material. This Office does not generally perform that function. According to your letter, your capillary tube thermostats contain methanol (Class 3, Flammable liquid) and water used as a charging mixture. Section 173.150(e) permits aqueous solutions of alcohol containing 24 percent or less alcohol by volume and no other hazardous material to be reclassified as a combustible liquid. Further, under § 173.150(e), an aqueous solution containing 24 percent or less alcohol by volume and no other



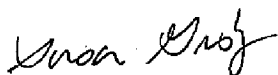
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hazardous material is excepted from the HMR if it contains no less than 50 percent water. You did not provide more specific information on the methanol and water mixture to enable this Office to provide you with a more specific opinion on the hazard class of these thermostats. However, based on the information you provided, if the capillary tube thermostats containing small amounts of the methanol and water charging mixture do not meet the hazard class defining criteria in Part 173, and are not a hazardous waste, hazardous substance, or marine pollutant, they are not subject to the HMR.

I hope this answers your inquiry.

Sincerely,



Susan Gorsky  
Senior Transportation Specialist  
Office of Hazardous Materials Standards

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June 23, 2003

Mr. Edward Mazzullo, Director  
Office of Hazardous Materials Standards  
Research & Special Programs Administration  
Department of Transportation  
Washington, DC 20590

Boothe  
§ 171.1  
Applicability  
03-0167

Dear Mr. Mazzullo:

On behalf of Therm-O-Disc, a division of Emerson Electric, I would appreciate your review of their capillary tube thermostats to determine whether this product contains material in a quantity and form that is subject to the hazardous materials regulations. I have a sample of this type of control in my office if you would like to examine it.

These controls are used in baseboard heater applications. Expansion and contraction of the charging fluid in a fine tube, under varying temperatures, exerts pressure on a bellows diaphragm located in the metal cup. This activates the switching of the control. See the attached drawing for a representative configuration.

These capillary controls are manufactured in various temperature control ranges and tube lengths. The lower temperature-rated controls utilize methanol and water as a charging mixture that is drawn into the small copper tubing during manufacture. Fluid volumes are very small, with the least material holding approximately 1 milliliter of charging liquid, up to 4.4 milliliters in the largest version. The entire unit is hermetically sealed under vacuum.

The units are packed in a fiberboard carton with 200-400 units per carton, each separated from the others in an egg-crate style inner packaging configuration, with a solid fiberboard divider separating the layers within the carton. In other words, each control is physically separated from each other control on all six sides.


The units are sealed and do not leak. If one were broken, which is difficult to do, capillary action tends to hold the small amount of charging fluid inside the control.

Attached is a representative drawing of one of these devices. I also have an example of one in my office if you would care to view it.

I would appreciate your concurrence that the small amount of this material, sealed within each control and packaged as described is in a quantity and form that does not pose a hazard in transportation and, therefore, these articles are not subject to the hazardous materials regulations.

Please contact me if you have any questions on this request.

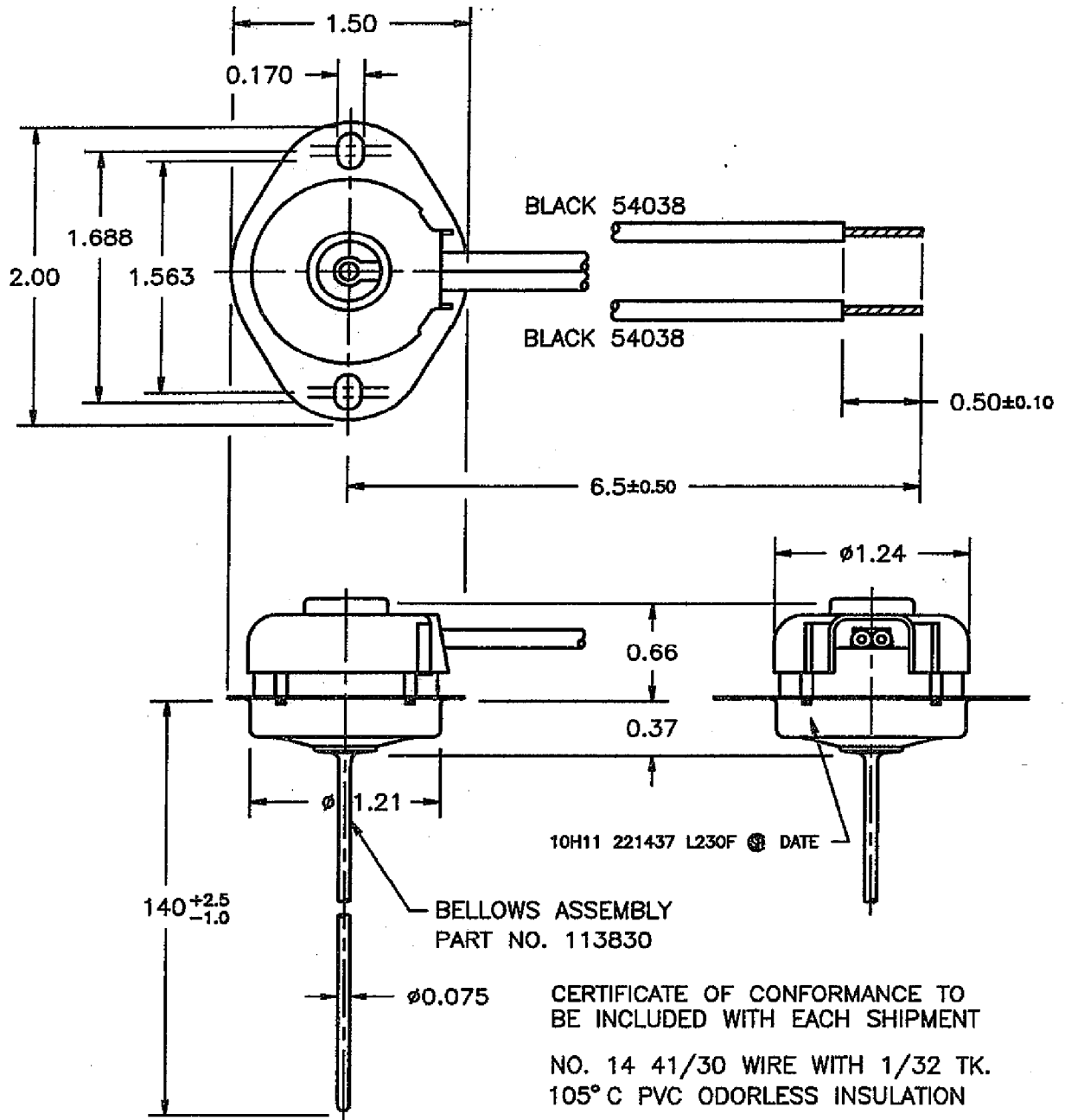
Sincerely,

A handwritten signature in cursive script, appearing to read "Lawrence W. Bierlein", written in black ink.

Lawrence W. Bierlein

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WM INDUSTRIES, INC.  
PARAMUS, NEW JERSEY



10H11 221437 L230F © DATE

BELLOWS ASSEMBLY  
PART NO. 113830

CERTIFICATE OF CONFORMANCE TO  
BE INCLUDED WITH EACH SHIPMENT

NO. 14 41/30 WIRE WITH 1/32 TK.  
105° C PVC ODORLESS INSULATION

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OPEN TEMP. 230±15°F

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MANSFIELD, OHIO

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DATA CONTAINED HEREIN.

DR. BY TSH 1-29-01	REVISIONS	UNLESS SPECIFIED 1 PL ± 0.040 2 PL ± 0.020 3 PL ± 0.010 ANGLES ± 5°
APPROVALS <i>[Signature]</i> 1-31-01 DTH 4/21/01	SCALE FULL	DR. NO. 221437