

# Technical Bulletin 102

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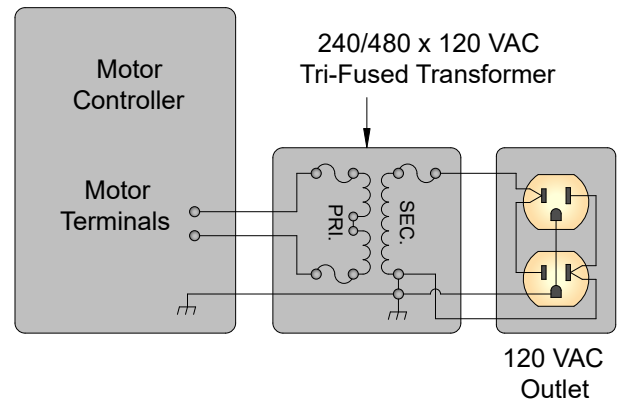
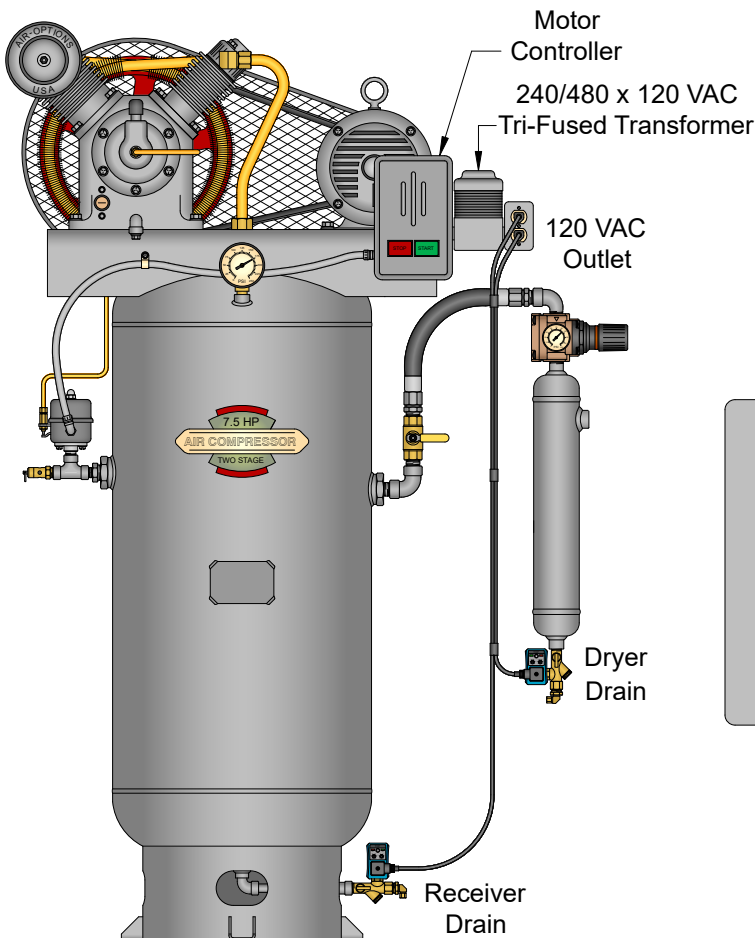
## High-Efficiency Automatic Drain Controller

by Brian S. Elliott

While electronically timed automatic drains offer the most cost-effective and reliable solution to draining the condensates from your compression system, they do have one significant drawback; that of operating 24/7. These drains plug directly into 120 VAC outlets, which means that they operate independently from the compressor. They repeatedly go through their draining cycle whether the compressor is operating or not. When the compressor isn't running, it isn't generating any condensate and, therefore, doesn't need to be drained. The obvious solution is to connect the automatic drain(s) to the motor terminals on the compressor. The problem with this arrangement is that the inductive kickback that the motor generates during switching can, and will, destroy the electronic controller on the drain(s). To correct this situation, the drains can be connected to the motor through an isolation transformer as shown in the illustrations. An ordinary tri-fused control transformer is ideal for this application. One should be certain that the KVA rating of the

transformer will support the total number of drains used in the system.

Electronically timed drains open when power is applied to them. To use them in this role, the open time is set to an appropriate time while the interval time is set to 45 minutes. When the compressor turns on, the drain opens for x number of seconds and then closes. The compressor will never run for 45 minutes, so when it shuts off, the drain function resets.



JTDryers.com

Air Options, Inc.  
P.O. Box 35984  
Houston, Texas 77235-5984  
Ph.: 713-721-9619  
E-Mail: Info@Air-Options.com

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