fireright
Warner Instruments
1320 Fulton Street
Grand Haven MI 49417-1534
Phone: 616-843-5342

TECH MEMO

Author: Gene Warner
Date: 02/07/96
No of Pages: 1

Re: **Replacing AutoMate I units with AutoMate II's**

Background

The AutoMate Automatic Kiln Switch is a device designed to automatically "turn up" ceramic kilns according to a user-adjustable schedule.

The original "AutoMate" switch was designed with a voltage-divider power supply system to save the space required by the more conventional power supply designs. Unfortunately, the heat dissipated by the voltage divider system, when combined with the heat from the kiln, impaired the reliability of the product. When protected from the heat of the kiln by mounting the switch near the bottom of its electrical cage or switch box, the AutoMate switch provided trouble-free service. When it was not possible to protect the unit from the kiln's heat, problems arose.

The original design was therefore abandoned, with the interests of reliability winning over the goal of making the unit interchangeable with RobertShaw (and other) "infinite control switches". The new design, called the "AutoMate II", requires more space on the mounting panel, but does not protrude as deeply into the kiln's switch box. It also uses a conventional transformer-type power supply, which dissipates very little heat of its own.

These changes succeeded in providing a product that was actually easier to install, and one that was infinitely more trouble-free.

Mechanical Retrofit

The new AutoMate II kiln switch is functionally identical to the earlier version. Replacing "AutoMate I" units with the new model usually involves only a few simple mechanical mounting alterations, and minor wiring differences.

To mount the new unit, hold the panel up to the mounting location of the original unit, and decide on its approximate location. A rectangular cut-out will be required for the new unit. This opening must be just large enough to permit the new unit's circuit board to pass through the mounting panel ... 3-1/2" wide x 5" high.

In most cases, light gauge metal is used for switch boxes, and a simple "nibbling tool" (available at Radio Shack, p/n 64-823 $10.99) will enable you to make this opening with very little effort. Simply mark the outlines for the opening, then use the nibbling tool to cut around its perimeter.

After providing the cut-out, position the AutoMate II unit at the mounting location, and mark the position of its four mounting holes. The unit can be fastened to the kiln using #6 self-tapping or "sheet metal" screws. Drill a 7/64 pilot hole to accommodate these screws.

Electrical Hook-Up

The wiring provided for the original AutoMate kiln switch can be connected to the new unit with only minor variations.

First, note whether the original switch was wired for 120v or 240v operation. If the original unit has a jumper connected between its "J1" and "J2" terminals, it's wired for 120v service. When no jumper is connected, it's wired for 240v.

Swap the connections from the original AutoMate unit to the AutoMate II unit as follows:

From *AutoMate I*	To *AutoMate II*
L1	L1
L2	L2
H1	d
H2	H2

Then add these connections:

120v Units	240v Units
L1 to H1 a to b c to d	L1 to H1 b to c

Some 120v kilns rated 15-amps or less may use the AutoMate switch to operate the heaters directly (no power relay). In these cases, the above wiring instructions still apply. However, in the interest of safety, please assure that the "hot" side of the two-wire 120v line (black wire) is connected to L1, and the "neutral" side (white wire) connected to L2. These kilns should be fitted with a polarized (three-prong) plug, with "earth ground" (green wire) connected to their frame.

Pre-Firing Test

After inspecting your installation and hook-up, the operation of the new AutoMate II Kiln Switch may be checked by simply moving the control knob from "OFF" towards "SET" and observing the operation of its indicator lights.

The "TIMING" light should begin to flash immediately, at a rate that varies with the switch setting ... slowly at high settings, and more rapidly as the turn-up time setting is reduced.

Leave the knob at the "SET" position. In about 10-seconds the "HEATING" light will be switched on for about one second. Every 10-seconds thereafter, this light will be switched on again, with the "on" time lengthening one-second per cycle. In about 100-seconds, the "HEATING" light will be switched on for the last time, and it will then remain on. Shortly thereafter, the "TIMING" light will go out, indicating that the switch has completed its turn-up sequence.

Technical Support

If you require further assistance, please use one of the following methods of contacting us:

fireright
Warner Instruments
1320 Fulton Street
Grand Haven MI 49417-1534 usa
Phone: 616-843-5342
e-mail: infolink@fireright.com

Page Last Revised on September 13, 2012