

## 2415 24-VAC Power Supply Installation

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### Preliminaries

#### Description

The 2415 Power Supply provides 24-VAC power for clock operation and correction functions. Twenty-five Rauland analog or digital clocks may be accommodated with this power supply. It can be installed on the side walls or the bottom panel of a rack or, for wall-mounted master clocks, in the back box.

There is also space for mounting the 2417 Adapter Module inside the power supply's chassis (refer to KI-1354 for mounting and wiring this module).

#### Parts List

##### Qty. Description

4 #8-32 "U" type speed nut.  
1 Cover.  
1 Chassis.

**Rauland  
Part No.**  
AB1818  
AN1006  
A3564

##### Qty.

##### Description

2 Capacitor, Across-the-Line Type, .0033  $\mu$ F, 1400 VDC.  
1 Power transformer.  
1 Terminal strip.  
1 #6 solder lug.  
1 Female disconnect.  
3 #6  $\times$  1/4 black hex washer-head thread-forming screw.  
2 #6  $\times$  3/8 hex washer-head thread-forming screw.  
2 #6-32  $\times$  1/2 pan-head machine screw.  
4 #8-32  $\times$  3/8 pan-head machine screw.  
1 #6-32  $\times$  3/8 hex washer-head thread-cutting screw.  
1 #6-32  $\times$  1/4  $\times$  3/32 hex nut.  
1 1.5-amp circuit breaker.

##### Rauland Part No.

CCS332  
LP0434  
TS0816  
T0025  
T0461  
WA6  
WA11  
WA59  
WA69  
WA203  
WB506  
X0588-08

### Installation

**Step 1.** Make sure that the AC power to the master clock is disconnected.

**Step 2.** Remove the three WA6 screws securing the cover and remove the cover.

**Step 3.** Select a mounting location on the rack or, for wall-mounted master clocks, in the back box. The location should not be obstructed by other equipment or wiring.

**Step 4.** Using the two holes in the bottom of the 2415's chassis as a template, mark and drill two 0.120-inch-diameter holes (#31 drill bit) in the mounting position.

**Step 5.** Using two WA11 screws, secure the chassis to the selected mounting position.

**Step 6.** Refer to KM0690 (attached) or to the wiring diagrams in KI-1316 (2424 master clocks), KI-1390 (secondary-clock correction with the 2490 Master Clock), KI-1470 (secondary clock applications), and KI-1496 (2490 Master Clock), then make the electrical connections. Use the printed information on the cover for the screw-terminal designations. There are knockouts for routing the electrical wiring.

*Important: The minimum acceptable voltage to any Rauland secondary digital clock (using the 24-VAC tap) is 19 VAC. To provide a reasonable working margin, the voltage drop in the wires running to the clock should not*

exceed 4 VAC. With a 24-VAC source, a 14-AWG wire will drop 1.26 volts per clock per 1,000 feet. Thus, for a maximum drop of 4 volts, 10 digital clocks could be connected to a 317-foot run of 14-AWG wire:

$$\frac{4}{10 \times 1.26} \times 1,000 = 317 \text{ feet (rounded)}$$

Using 12-AWG wire, the run could be 503 feet:

$$\frac{4}{10 \times .795} \times 1,000 = 503 \text{ feet (rounded)}$$

**Step 7.** Replace the cover and fasten it with the three WA6 screws.

*Note:* The master clock may be initialized and programmed according to the normal procedures provided in its instruction manual.

#### **Warning**

This device uses an autoformer. Be sure to connect the "hot" side of the AC line source to terminal "F," as shown in KM0690 (attached). Reversing the "hot" and neutral connections could create a shock hazard and damage the secondary clocks.

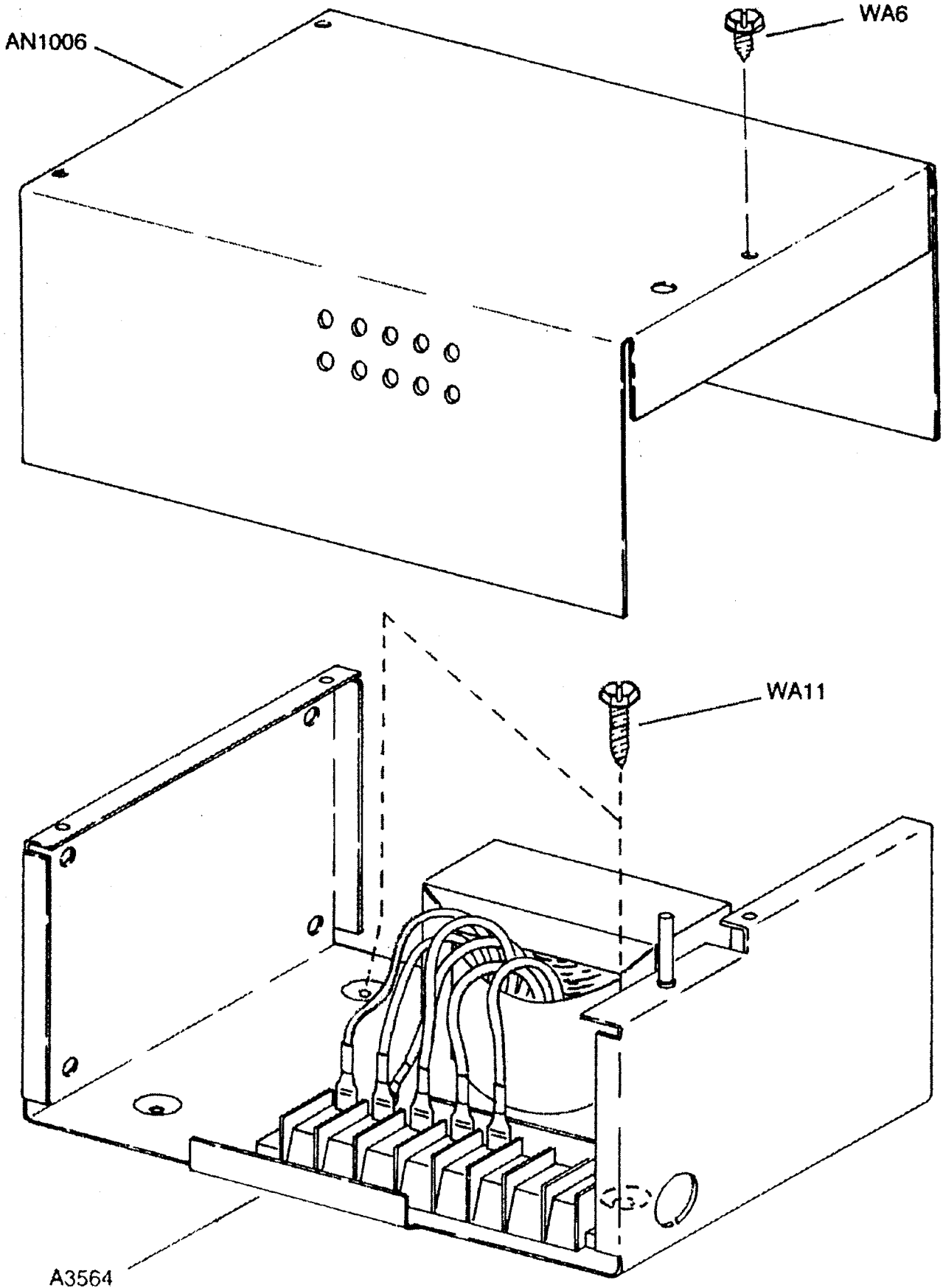
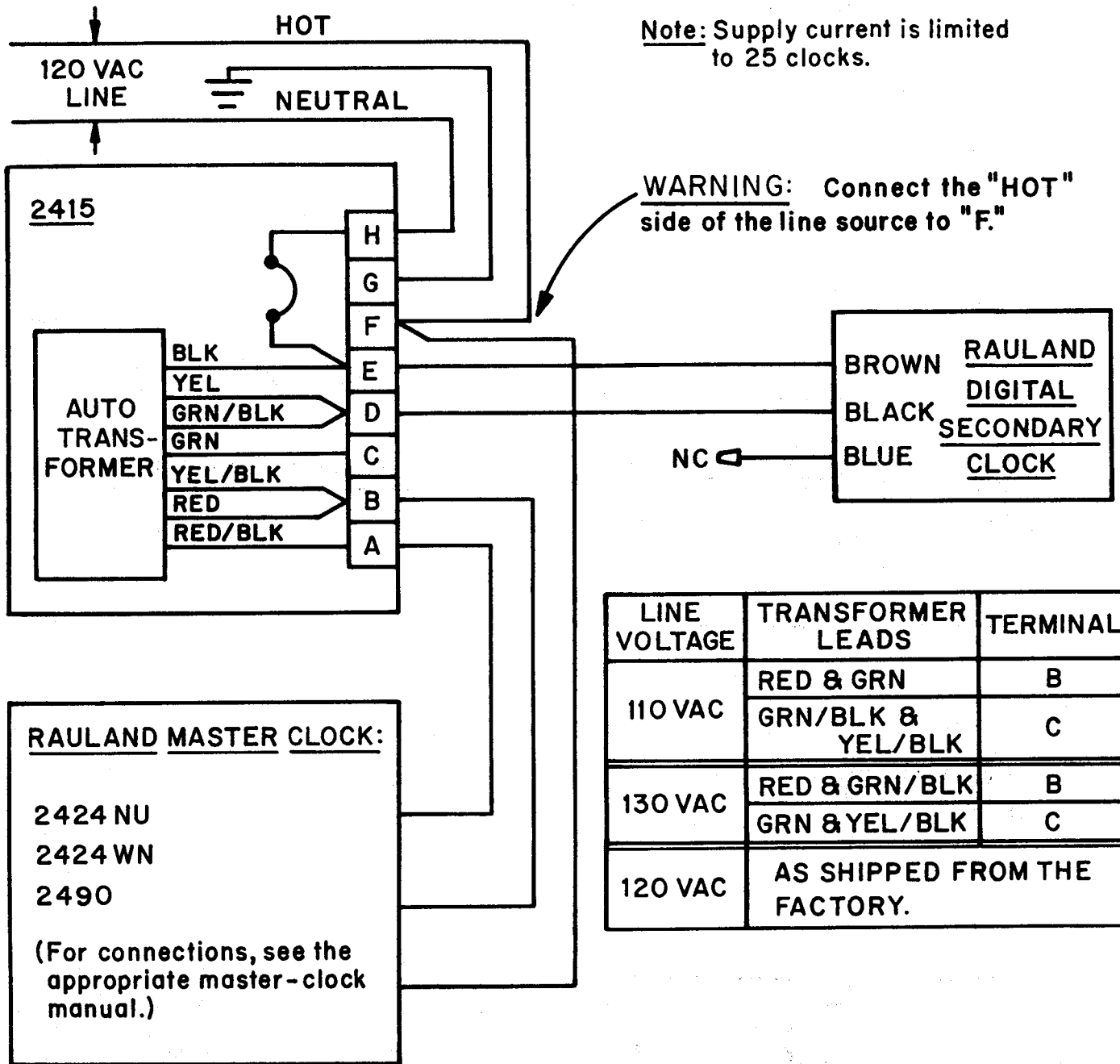


Figure 1. 2415 Power Supply

Note: Supply current is limited to 25 clocks.

**WARNING:** Connect the "HOT" side of the line source to "F."

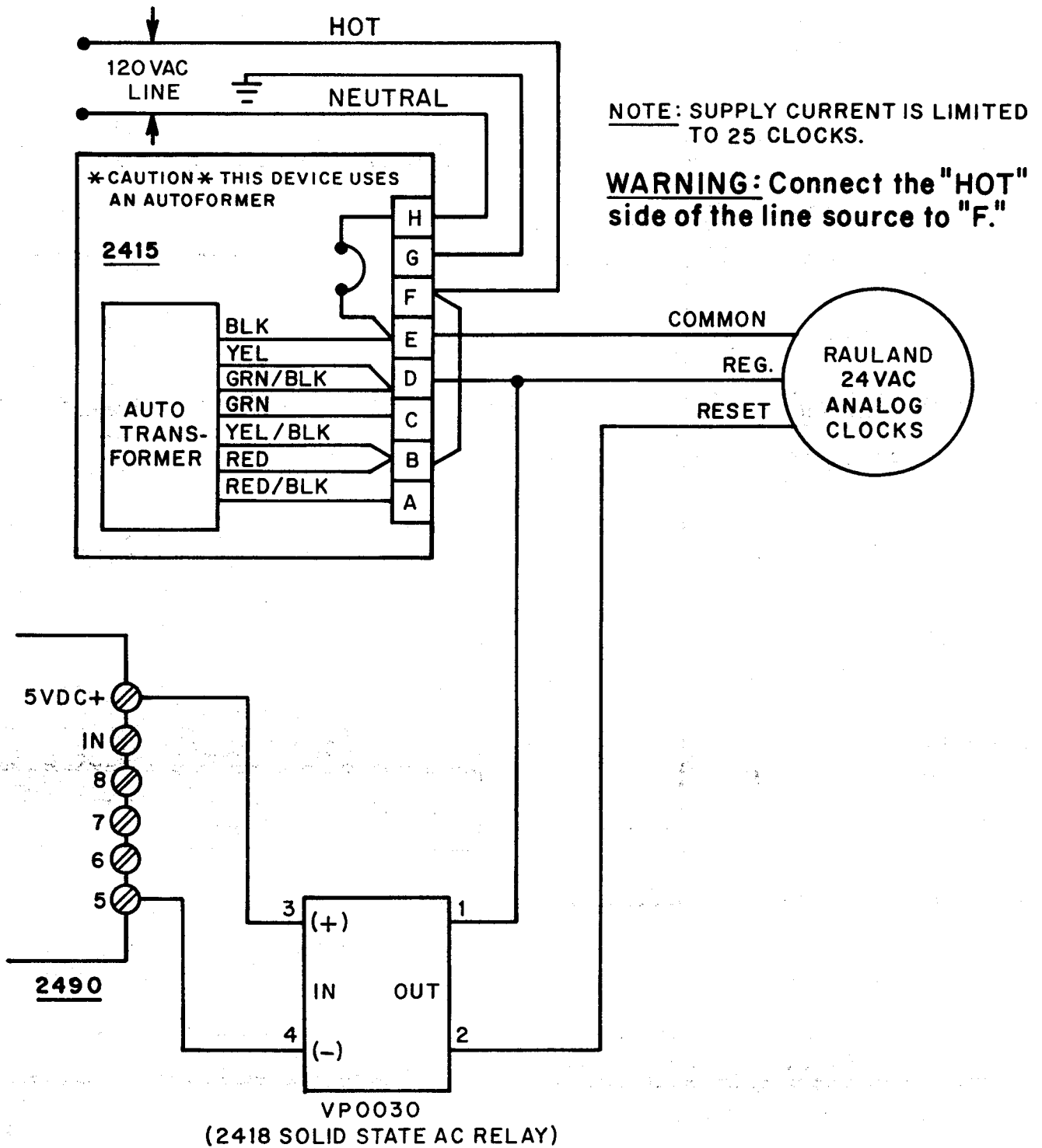


**SECONDARY CLOCKS ARE AUTOMATICALLY CORRECTED:**

- Every 24 hours at a minute past midnight.
- Whenever the master clock's time is reset.
- After a power failure (a battery backup is required with the 2490).
- When the master clock is changed to or from Daylight Saving Time.

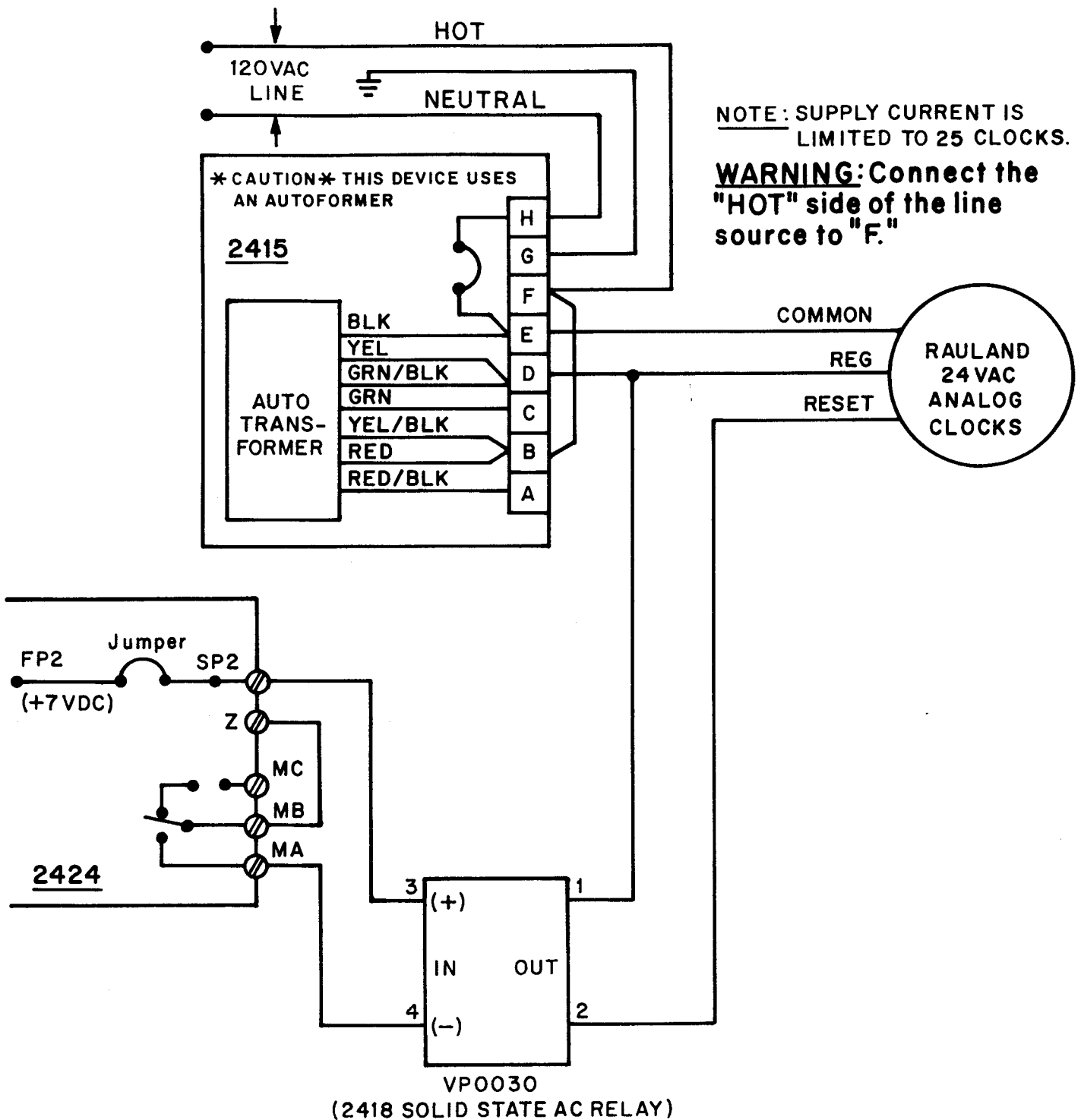
Figure 2. Connecting Digital Secondary Clocks Using the 24-VAC System

# 24VAC WIRING FOR RAULAND ANALOG SYNCHRONOUS CLOCKS



THE 2490 MASTER CLOCK IS PRE-PROGRAMMED TO OUTPUT RAULAND ANALOG CORRECTION SIGNAL ON TERMINAL 5.

## 24VAC WIRING FOR RAULAND ANALOG SYNCHRONOUS CLOCKS



THE 2424 MASTER CLOCK IS PRE-PROGRAMMED TO OUTPUT RAULAND ANALOG CORRECTION SIGNAL ON RELAY "M" WITHOUT A JUMPER ON CXP PANEL.