

### Wiring Checkout at Heater

#### Step 1

- Remove power at supply disconnect.
- Check continuity of all fuses.
- Check thermal cutouts and heat limiters.
- Check back-up contactor's resistance continuity.

#### Step 2

- Check heater for correct wiring as per the manufacturer's wiring diagram.
- Master SCR and primary control transformer must be connected across the same phase of the supply voltage.
- With power on, check phase rotation of 3 phase heaters. If output amperage on Master or Slave(s) is zero, or unbalanced, reverse L1 and L2 at the heater's incoming supply.
- An overloaded 24V AC control transformer secondary may cause a shifted phase relationship between the primary and secondary windings. This will cause the thermostat output pulses to be shifted. Pulses will not occur at zero line-crossing voltage. This condition will improperly trigger the Master ON and may cause RFI (Radio Frequency Interference) problems. Replace control transformer with properly sized unit.

#### Step 3.1 Thermostat 701-1 or 701-2 Checkout

- Verify 24V-AC from output of control transformer (10%±) between BLU (COM) and BLK #18 leads of the Master.
- A 1/2 Volt AC output (intermittently on and off) between RED and BLK #18 wires should be observed.

#### NOTE

The measured signal will vary on/off within the 5-second time base. This 1/2 volt signal either turns the Master On or Off (i.e., 1-second ON/4-seconds OFF; 2-seconds ON/3 seconds OFF, etc.).



#### CAUTION

Do not short any thermostat connections.

#### Step 3.2 Interface 707-1A Checkout

- Verify 24V AC between the two (2) YEL #22 wires.
- Measure 1V AC output between RED and BLK #22 gauge wires.

- Shorting wiring BLU/BLK to BLU/WHT will turn the system full On. Shorting RED/BLK to BLU/WHT will turn the system Off.

#### NOTE

The measured signal will vary on/off within the 5-second time base (i.e., 1-second ON/4-seconds OFF; 2-seconds ON/3 seconds OFF, etc.).

#### Step 3.3 Interface 707-2A thru 6A Checkout

- Verify 24V-AC between two (2) ORG #22 wires.
- Measure 1V-AC output between RED and BLK #22 gauge wires.

#### NOTE

The measured signal will vary on/off within the 5-second time base (i.e., 1-second ON/4-seconds OFF; 2-seconds ON/3 seconds OFF, etc.).

- Verify correct polarity between YEL #22 gauge (+) and BLU #22 gauge (-) .

#### Step 4 Master (SCR)

- Turn thermostat to lowest temperature setting, place an amprobe across load of Master. No current should be measured.
- Turn thermostat to highest temperature setting. Full load current should be measured.
- Turn the thermostat to within 1°F of room temperature and observe the load (current) modulating ON and OFF automatically.

#### Step 5 Slave (SCR)

- With YEL #18 signal lead removed, no load current should be measured.
- YEL #18 signal lead in place, the load current should be full On when the thermostat is set at the highest temperature setting.
- Each Slave in the system should be individually checked in this manner.

#### NOTE

If a Master or a Slave has a shorted triac, causing it to conduct continuously, then all Slaves which are downstream of the defective device will conduct continuously.