

PREFACE

180 ZXT 24

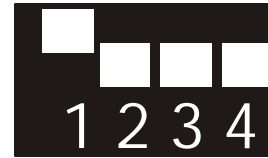
Normally the **KIN0X** is installed in the workroom near the breaker or fuse panel. Several **KIN0X** units can be installed beside each other. The relays can be mounted on 4x4 junction boxes above the **KIN0X** units for convenience. The transformer can be mounted on the junction boxes that the relays are mounted on. One transformer can power 2 **KIN0X** units with 2 **R2420** relays each or 10 **SS2430** relays each. One **KIN0X** should be used for each temperature stage. For instance, four temperature stages may be desired; if so, one **180 ZXT 24** and three **180 ZX 24** units could be used. If separate timer controls for another fan are desired then add another **180 ZXT 24**. More than one fan can be controlled by each **KIN0X** via relays. All fans being controlled by a **KIN0X** will turn on and off simultaneously. An equal number of fans may be desired for each temperature stage. An alternative would be to have a few fans controlled by the **KIN0X** with the lowest temperature setting (which may be the timer fans). More and more fans would be controlled by each **KIN0X** with higher temperature settings.

The **KIN0X** comes set with dipswitch 1 on for Normal Cool Operation. When the relay is energized, the fans operate. Cool **VFS** is accomplished by changing the dipswitch to 3. When the relay is not energized, the fans operate. This mode is especially useful for the minimum ventilation fans such as timer fans and/or fans set at the lowest temperature settings. If failure occurs to the transformer, the relay, or the wiring, the fans operate. Another idea for **VFS** is to have the second stage fan transformer monitor power on the first stage fans. If the breaker fails on the first stage fans, the second stage fans operate. **Neat!**

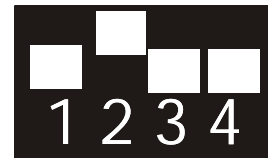
The **180 ZXT 24** can have an outside temperature sensor connected to terminals 5 and 6. This sensor should be mounted under the eave of the building on the outside. Basically it measures the temperature of the air coming into the building when the fans operate. It will automatically adjust the timer without moving the knob, to compensate for the increased moisture removal capability of colder air. This saves energy at night while maintaining good ammonia control. The timer runs the amount dialed when outside temperatures are 70°F or above. There are adjustments for each degree the temperature is reduced below 70°F until 30°F. At 30° F, the sensor ceases to reduce the timer run time. At that point, the timer runs approximately 50% of the amount dialed.

KIN0X® Function Codes

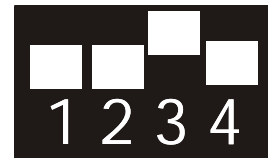
By setting the DIP switch on the printed circuit board, the following Variety of functions can be achieved.



Cool Normal
Relay is energized to Cool



Heat Normal
Relay is energized to Heat



Cool VFS
Relay is de-energized to Cool

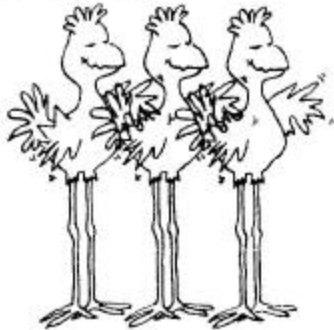


Heat VFS
Relay is de-energized to Heat

will automatically override the timer functions.

INSTALLATION AND OPERATION INSTRUCTIONS

PRO-TECH



THEM CHICKENS

(1) Mount the **KIN0X** unit(s) with the screws provided. Consider mounting it (them) close to the transformers. Hopefully the **KIN0X** units can be mounted near an entrance and breaker panel, side by side.

(2A) Locate the sensor(s) in the place where temperature is to be monitored. Use 2 conductor 18 gauge stranded wire such as lamp cord or shielded wire, to extend the sensor(s). Observe the sensor's color codes. Lamp cord has one ribbed and one smooth conductor. Consider connecting the ribbed conductor of the lamp cord to the red conductor of the **TEMPSENSOR**. Switching wires to the wrong terminal will not damage the unit but will cause it not to work correctly. The red **AC** light will blink until the sensor is wired correctly. ***NOTE:** The sensor wire should not be run parallel or within 4 feet of any high voltage wires.

(2B) One **sensor can operate all models**. To achieve this, select one unit to be the **MASTER** unit. Normally this is a timer model. All other **KIN0X** units will be "slave" units. Cut resistor #1 from terminals 1 and 4 on all the slave **KIN0X** units as indicated in Diagram 2, but not the **MASTER** unit. **180 ZXS 24** models already have this modification. Connect the sensor to a **MASTER KIN0X** with the black wire to terminal 4 and the red wire to 5. Connect a common wire to terminal 4 of each **KIN0X**. Connect a common wire to terminal 1 of each **KIN0X** that is not connected to a common transformer. Any number of **KIN0X** units can be tied together this way, if in **VFS**. But if **NORMAL COOL** or **HEAT** is used, a maximum of 6 **KIN0X** units can be tied together along with an unlimited number of **VFS KIN0X** units.

(3) Connect wires from terminals 1 and 2 of the **KIN0X** to the terminals of the **T 2420** Transformer. The **T 2420** Transformer supplied by Pro-Tech must be connected to 230 VAC. 115 Volt transformers are available. Use of a transformer not supplied by Pro-Tech might create unpredictable performance of the **KIN0X**. They should be mounted on the 4X4 junction boxes that the relays are mounted on and wired to the fan breaker for the fans they are controlling. An exception would be for the second stage fans when wired for **VFS**; then a transformer on the first stage fans powers that transformer. When one-transformer powers 2 or more **KIN0X** units, make double sure to have the terminal No. 1 of each **KIN0X** go to the same screw of the transformer.

(4A) An **R 2420** relay can be mounted above the **KIN0X** on a 4X4 junction box. The **R 2420** is a double pole relay and it can break both legs of electricity. This relay must be used on **VFS KIN0X** units.

(4B) A **SS 2430** relay should be mounted on a 4X4 junction box to activate each fan circuit. It is a solid-state single pole single throw relay.

(5) Now wire the white wire from the coils of the relays to terminals 2 & 3 of the **KIN0X** using a minimum of 18 gauge stranded wire. Lamp cord works well. Up to 3 **R 2420** relays can be operated on 1 **KIN0X** powered by 1 **T 2420** Transformer. There may be 10 **SS 2430** relays used on 1 **KIN0X**.

(6) After all connections have been made to the relays, including connections to the fan motor, the **KIN0X** is ready to test. Apply power to the unit. The Red AC light should be on. If the RED AC light is blinking, a sensor malfunction is indicated. Check to be sure the sensors are hooked up properly. Be sure all of the **KIN0X** units are wired to the MASTER unit properly if "wired" on one sensor. Also be sure a resistor is removed on each slave **KIN0X**, when only one sensor is used. If the AC light is blinking on the **180 ZXT 24**, the green timer light will be on if the timer knob is above 10% and fans will run continuously. Otherwise, the **KIN0X** will turn the fans on when the temperature exceeds the set point and the green **ON** light should be lit. As you turn the knob to a cooler setting, the fans will turn on. This is accomplished by energizing the relay when cooling is called for. There is a slight delay in both turning on or turning off.

I. Calibration may be necessary on some individual **KIN0X** units. When calibrating, adjust so the green ON light just barely turns off at room temperature (sensor temperature).

A) If only minor changes are needed to recalibrate, remove the knob with a pull, turn it the amount of adjustment needed, and push it back on.

II. When one **TEMPSENSOR** is controlling only one **KIN0X**, recalibrating the **TEMPSENSOR** is easier than recalibrating the **KIN0X**.

A) To adjust the **TEMPSENSOR** set the knob on the **KIN0X** to room temperature. You must have the sensor beside the **KIN0X** and not in the house so you are sure of the temperature. Hold the **TEMPSENSOR** on the cord end. Avoid having anything close to the tip. Using a small

screwdriver, turn the adjustment screw clockwise to recalibrate for a higher temperature.

KIN0X WITH CYCLE TIMER

(1) After the previous steps have been completed, set the timer knob on the unit to the desired percentage of fan run time. This is a 5 minute cycle with a 0% - 100% fully variable adjustment.

(2) After a power failure or initial turn on, the timer will automatically come on for the desired percentage. The green timer light under the knob indicates the timer is calling for operation of the fans.

(3) This model **KIN0X** will not turn the fan off until time has run out, even if the knob is set to a higher temperature.

KIN0X WITH CYCLE TIMER AND OUTDOOR SENSOR (OPTIONAL)

(1) Remove the resistor from terminal 6 and leave it under terminal 5 for future use.

(2) Install the outside sensor by hooking wires to terminals 5 and 6, making sure the red wire is connected to terminal 5 and the black wire to terminal 6. The **TEMPSENSOR** should mount outside the house in a protected place to detect outside temperature. If the sensor is not hooked up properly, the AC light will blink and the fans will come on.

(3) Set the knob on the timer for the desired percentage of run time according to the age of the birds, based on 70 degrees F outside temperature. As outside temperature drops, cycle percentage will be reduced automatically. Nighttime temperatures have determined timer ventilation until now. Now daytime temperatures can determine ventilation rate and nighttime ventilation is done automatically.

(4) For example, when the cycle timer knob is set to 50% (run time will be 2-1/2 minutes of every 5 minutes at 70°F), at 40°F. outside temperature, the cycle timer will automatically be cut by 40%, (run time will be 1-1/2 minutes). At 32°F, the percentage would be cut by 60% (run time will be 1 minute). The cycle time is cut proportionately from 100% of the knob setting at 70°F. (outside temperature) to 40% of the setting at 32°F. If the temperature rises inside the house. the temperature setting on the **KIN0X**

