







Installation & Operation Manual


Precautions

To prevent injury and property damage, follow these instructions. Failure to adhere to installation/operation procedures and all applicable codes may result in hazards as indicated by warning codes outlined below:

-  **DANGER** Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations.
-  **WARNING** Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
-  **CAUTION** Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.
-  **This is the safety alert symbol.** Read and follow instructions carefully to avoid a dangerous situation.
-  **This symbol alerts the user to the presence of “dangerous voltage”** inside the product that might cause harm or electrical shock.

Safety Instructions

 **DANGER**
Equipment can start automatically. Lockout/tagout before servicing

 **CAUTION**
As with all electrical products, read manual thoroughly. Only qualified, expert personnel should perform maintenance and installation. Contact the nearest authorized service facility for examination, repair, or adjustment. Do not disassemble or repair unit unless described in this manual; death or injury to electrical shock or fire hazard may result. Specifications and manual data subject to change. Consult factory for additional information.

Installation

  **DANGER**

FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN DEATH OR SERIOUS INJURY

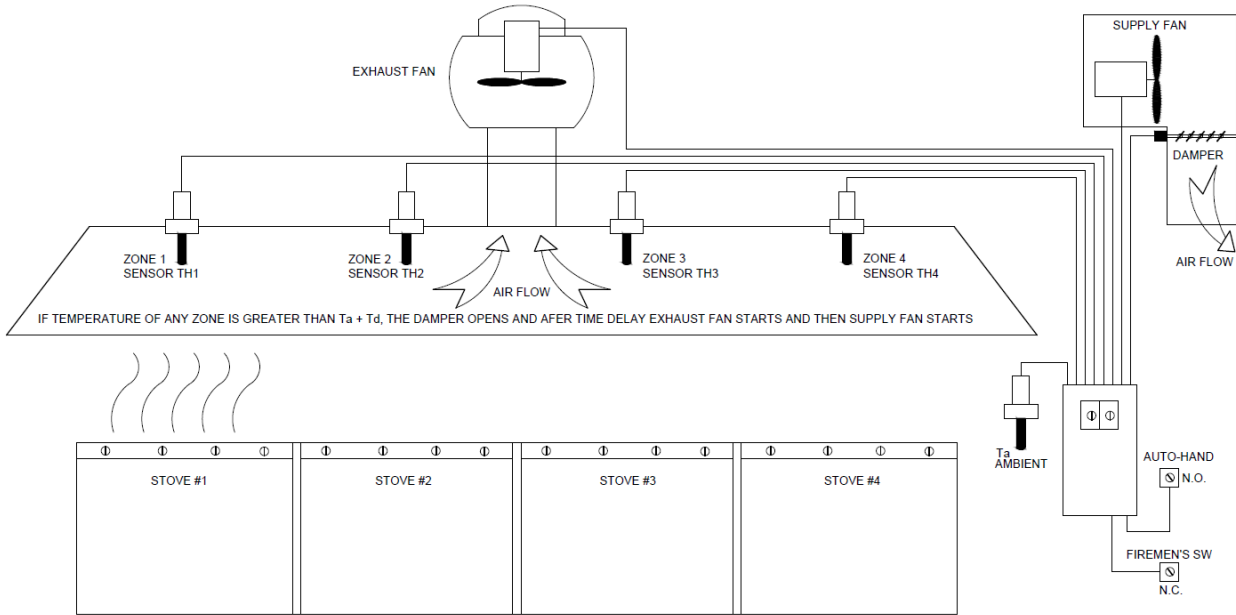
HAZARDOUS VOLTAGE

- Disconnect and lock out all power before installing or servicing equipment
- This equipment may require locking out multiple power sources prior to service
- Install and wire in accordance with all applicable local & national electrical and construction codes

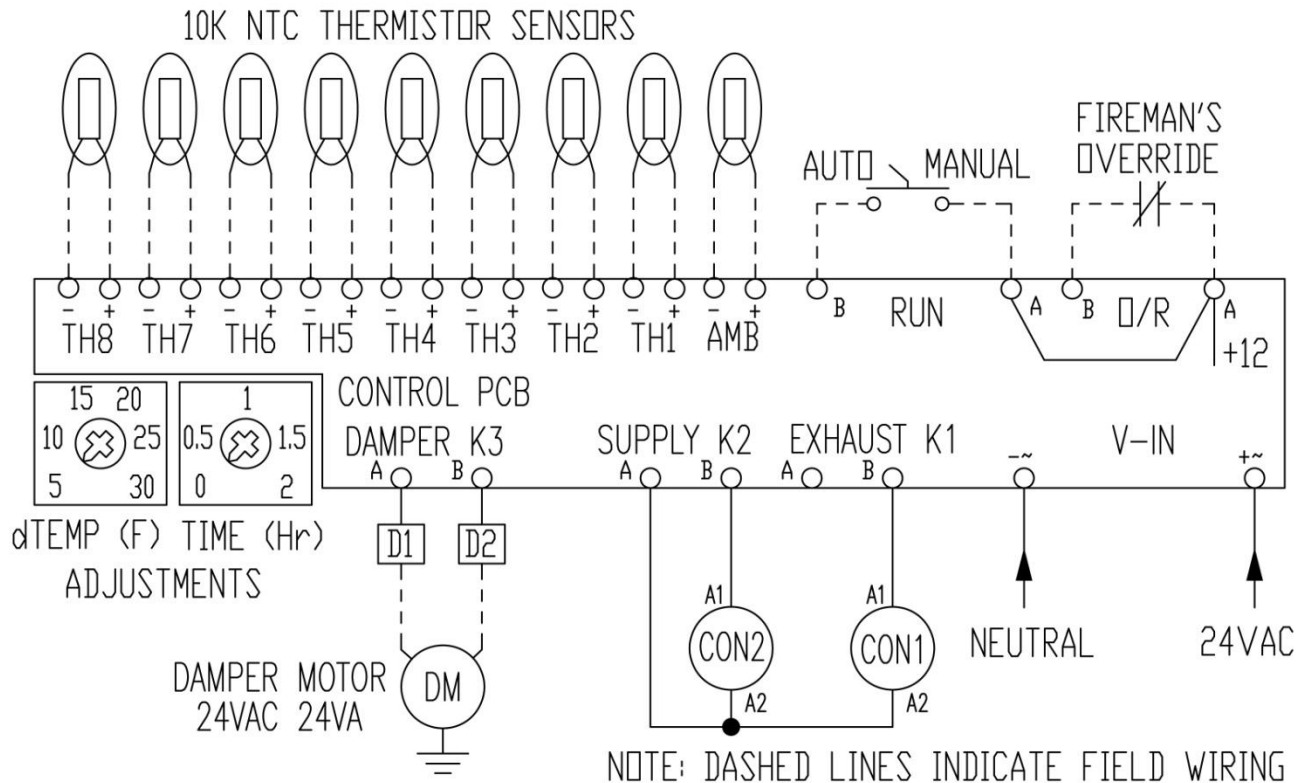
Mounting

Mount the starter on a vertical surface, with the line terminals facing up. Install using 1/4" diameter hardware suitable for the mounting surface. The KHC is designed for indoor installation with UL Type 1 environmental rating. Do not allow any metal shavings or debris from installation to enter enclosure. Use the figure below as a reference guide for sensor and equipment locations.

Figure 1



Schematic



Field Wiring

Wire main power input and motor leads to the appropriate terminals tightened to specified torques indicated in the Torque Table below. Use only copper conductors rated at least 60°C for applications less than 100A and at least 75°C ≥ 100A. Maintain proper clearances and verify that no possibility of an electrical short exists between the power conductors or enclosure. Ensure that wires are not under stress and all insulation is intact. Verify voltage input matches label and the control power is tapped per schematic.

Torque Table

Input	Output
18 lb-in	20 lb-in

Low Voltage Wiring

Automation system and sensor control wiring should be run in a separate conduit. The control terminals accept 26~14AWG wire in spring operated terminals.

Operation

Settings & Adjustments

The **dTEMP** adjustment sets the desired differential temperature set-point. The adjustment range is 5°F to 30°F. The damper and fan relays will energize once the measured temperatures of the ambient and any hood sensor exceed this setting.

The **TIME** adjustment sets the minimum fan run time. The adjustment range is 0-2 hours.

Automatic operation

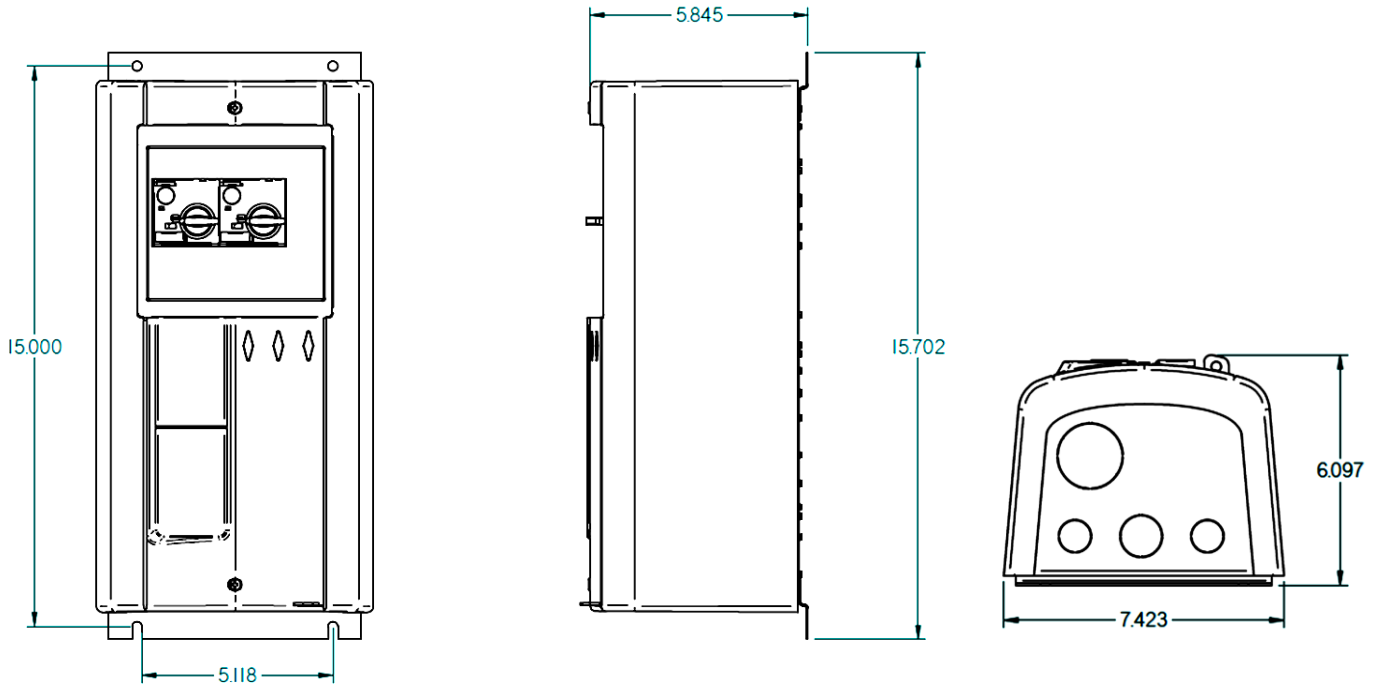
The KHC is designed to control Kitchen Hood supply and exhaust fans based on the temperature differential between the ambient and any hood zone sensor. If the Fireman's Override (F.O.) contact remains closed and Auto/Run switch is in Auto position, both fans will operate based on the sensor inputs, **dTEMP** and **TIME** settings. When the temperature differential between any sensor (TH1-TH8) and ambient temperature (AMB) exceeds the **dTEMP** set-point, the damper relay (K3) closes and the supply (K2) and exhaust (K1) relays energize after a non-adjustable 10 second time delay

Manual operation

For manual operation, close the RUN contacts with a customer supplied switch. When closed, the controller will operate the damper and run both fans continuously. Fireman's Override must remain closed for normal operation. If the F.O. contacts open, the damper and supply relays de-energize, and only the exhaust relay is energized for smoke purge mode.

Product improvement is a continual process. KHC, Cerus, Mira, Orion and associated logos are trademarks of Cerus Industrial Corp. All sales subject to Cerus Terms & Conditions.

Dimensions



Specifications

<i>General</i>	<i>Power requirement</i>	120-208-230-480VAC
<i>Outputs</i>	<i>+12</i>	12VDC 100mA Max. (voltage for 0/R and RUN inputs)
	<i>Damper</i>	24VAC 20VA
<i>Inputs</i>	<i>0/R</i>	Fireman's override. Connect to +12 for normal operation, open for Fireman's override
	<i>RUN</i>	Manual override. Open for normal operation, connect to +12 for manual run
	<i>AMB</i>	Ambient temperature input. 10k NTC thermistor
	<i>TH1-TH8</i>	Vent hood temperature inputs. 10k NTC thermistor
	<i>dTEMP</i>	5-30°F Differential temperature adjustment range
<i>Adjustments</i>	<i>TIME</i>	0-2 hours Minimum run time
	<i>LED</i>	PCB LED flashes to indicate microcontroller operation
<i>Indicators</i>	<i>Overall</i>	15.70" L x 7.42"W x 6.1" H
<i>Dimensions</i>	<i>Mounting</i>	4 holes ¼" diameter
		24-14AWG Copper conductors
<i>Terminal Blocks</i>	<i>Storage</i>	12°F to 132°F (-10°C to 55°C)
	<i>Operating</i>	32°F to 122°F (0°C to 50°C)