P/N: 997-250011-2

Gas Furnace Control Center

Cancels: New

IIK 375A-40-4
10-15-93

Installation Instructions
Part No. HH84AA021

NOTE: Read the entire instruction manual before starting the installation.

INTRODUCTION

This instruction covers installation of the gas furnace control center Part No. HH84AA021, in an intermittent ignition (IID), induced draft, or condensing gas furnace.

SAFETY CONSIDERATIONS

Installing and servicing of heating equipment can be hazardous due to gas and electrical components. Only trained personnel should install or service heating equipment.

Untrained personnel can perform basic maintenance functions such as cleaning coils, or cleaning and replacing filters. All others operations should be performed by trained service personnel. When working on heating equipment, observe precautions in the literature, on tags, and on labels attached to the unit.

Follow all safety codes. Wear safety glasses and work gloves. Have a fire extinguisher available.

⚠ WARNING

Before beginning the installation or modification, be sure the main electrical disconnect switch is in the OFF position. Electrical shock can cause personal injury or death.

DESCRIPTION AND USAGE

The HH84AA021 control center is a new generation control for the replacement market.

The control center is designed to function similarly to previous control center designs, while incorporating some of the latest features in furnace control center technology. It is a direct replacement for the following control center Part No.: HH84AA001, HH84AA003, HH84AA005, HH84AA009, HH84AA014, HH84AA015, or CESO110019.

Following is a description of the slight operational differences and added features. Refer to Fig. 2 for location of control center components.

OPERATION WITH NEW BLOWER AND HUMIDIFIER RELAYS – The previous design control centers used a SPST-NC or DPST-NC heating fan relay (HFR or 2E) and a DPDT cooling fan relay (CFR or 2F) for blower and humidifier terminal operation. This new control center uses a SPST-NO blower relay (BLWR) and a DPST blower speed change relay (HI/LO) for blower operation, and a SPST-NO humidifier relay.

The furnace sequence of operation with the new control center is unchanged with 3 exceptions. Refer to Fig. 1 for new relay and control logic and compare to existing furnace wiring diagram.

1. The LO speed blower will not operate on a transformer failure as on previous designs.
2. If JW1 jumper is cut between R and GH terminals a constant LO speed blower will occur without any thermostat inputs to the control center. A GC or Y signal to the control center WILL NOT bring on the HI speed blower for cooling operation. JW1 jumper MUST NOT be cut on cooling applications.
3. The humidifier H terminal is energized with LO and HI speed blower operation. In cooling operation, the humidistat and humidifier water supply must be turned off to ensure the humidifier does not operate.

24-V CIRCUIT PROTECTION – An automotive type, 3-amp fuse is provided to protect the transformer and thermostat from shorts in the low-voltage circuitry. An open fuse will initiate a constant blower. Refer to Fig. 2 for location on control center.

LO SPEED CONTINUOUS G BLOWER AND 90 SECOND HI SPEED BLOWER OFF DELAY OPTION – Resistor (R18) on the control center can be cut to achieve heating speed continuous blower with a thermostat R-G call and a HI speed blower with 90 sec off delay with a thermostat R-Y call.

When this option is chosen, Y from the thermostat and the outdoor unit MUST be connected to the control center Y terminal to get the HI speed blower on an R-Y call. Refer to Fig. 2 for resistor location and Table 1 for blower operation modes.

⚠ CAUTION

Do not use this option in twinned furnace applications.

INSTALLATION

1. Disconnect wiring from blower control center, noting location.
2. Remove existing blower control center and install new blower control center in control box. Be sure top edge of board is in the mounting slot. If board is installed behind slot, electrical shorting could occur in the control box. Replace wiring on board as removed. See unit wiring label.
3. Turn power to ON position and check unit sequence of operation per unit Installation Instructions.
4. This instruction MUST be placed with the original unit Instruction Packet or with the unit for future reference.

Table 1—Blower Operation Modes

INPUT FROM THERMOSTAT	RESISTOR (R18) UNCUT	RESISTOR (R18) CUT
W	LO Speed Heating Blower*	LO Speed Heating Blower*
G	HI Speed Cooling Blower	LO Speed Heating Blower
Y	No Blower	HI Speed Cooling Blower†

* 50 sec on delay and 60-240 sec adjustable off delay.
† 90 sec off delay.

NOTE 1: PL1 and 10B1 indicates 7-PIN edge connector terminations that connect to control center. Refer to unit wiring diagram for specific unit wiring from control center edge connector.

LEGEND

BLWR	BLOWER MOTOR RELAY (SPST-NO)
CAP	RUN CAPACITOR
FU	FUSE (ATO 3AMP)
HI/LO	BLOWER MOTOR SPEED CHANGE RELAY (DPST)
HUM	HUMIDIFIER RELAY (SPST-NO)
ILK	SWITCH, BLOW. DOOR INTERLOCK (SPST-NO)
JW1	JUMPER WIRE
MC	MICROCONTROLLER
MTR	MOTOR, BLOWER
TRAN	TRANSFORMER

- PLUG RECEPTACLE
- JUNCTION
- UNMARKED TERMINAL
- TERMINAL PCB
- FACTORY WIRING (115V AC)
- FACTORY WIRING (24V AC)
- CONDUCTOR ON PRINTED CIRCUIT BOARD
- SCREW TERMINAL FOR FIELD WIRING
- EQUIP. GROUND

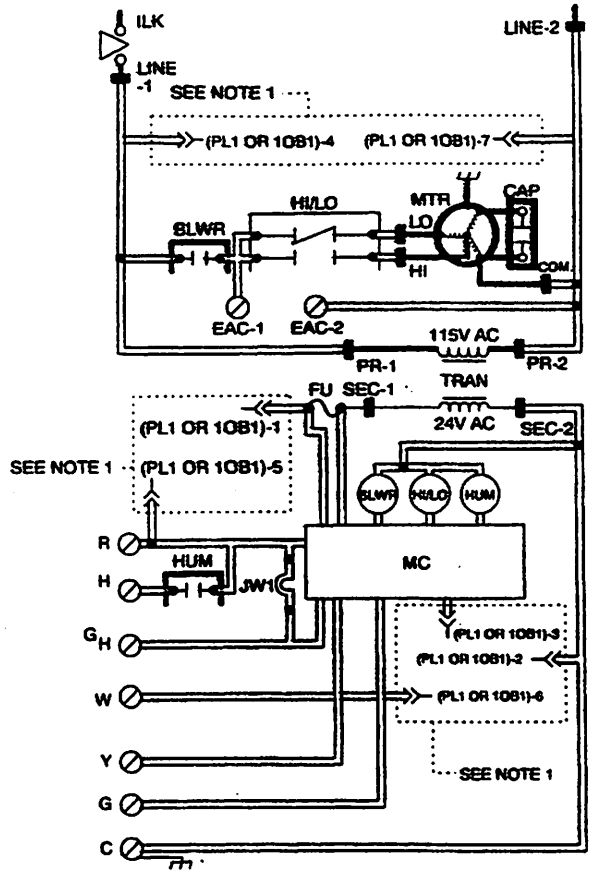

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Fig. 1—Wiring Schematic

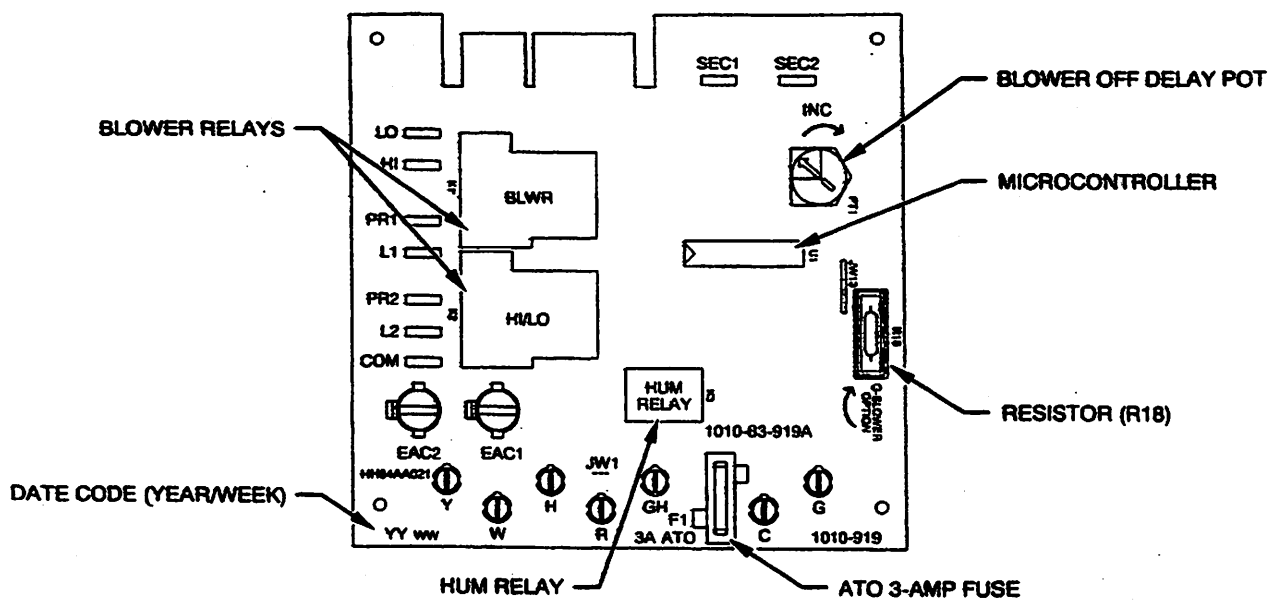

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Fig. 2—Control Center Component Location