

**INSTALLATION INSTRUCTIONS FOR C1SNSR60FFI ENTHALPY SENSOR KIT  
(603364-28; 10Z75) USED WITH HIGH PERFORMANCE ECONOMIZERS**

**Shipping and Packing List**

**Package 1 of 1 contains:**

- 1- Sensor
- 2- #6-32 X 7/8" Screws
- 1- P104 Wiring harness (used for outdoor air sensing only)
- 1- P105 Wiring harness (used for return air sensing only)
- 1- J105 Wiring harness (used for return air sensing only)
- 1- J104 Wiring harness (used for outdoor air sensing only)
- 1- Bracket (used on 092-150 units only)
- 1- Wire tie
- 1- #10-16 X 5/8" SDST screw

*IMPORTANT - Two kits must be installed if differential enthalpy sensing is specified.*

Check packaging for shipping damage. Contact the last carrier immediately if any shipping damage is found.

**Application**

Sensors provide input to determine free cooling suitability. The enthalpy sensor provided in this kit senses both sensible temperature and humidity. See table 1 for usage.

Refer to economizer installation instructions.

*Note - Differential sensor applications must use the same two sensors.*

**⚠ WARNING**

**Improper installation, adjustment, alteration, service or maintenance can cause property damage, personal injury or loss of life. Installation and service must be performed by a qualified installer, service agency or the gas supplier**

**⚠ CAUTION**

**Danger of sharp metallic edges. Can cause injury. Take care when servicing unit to avoid accidental contact with sharp edges.**

**TABLE 1**

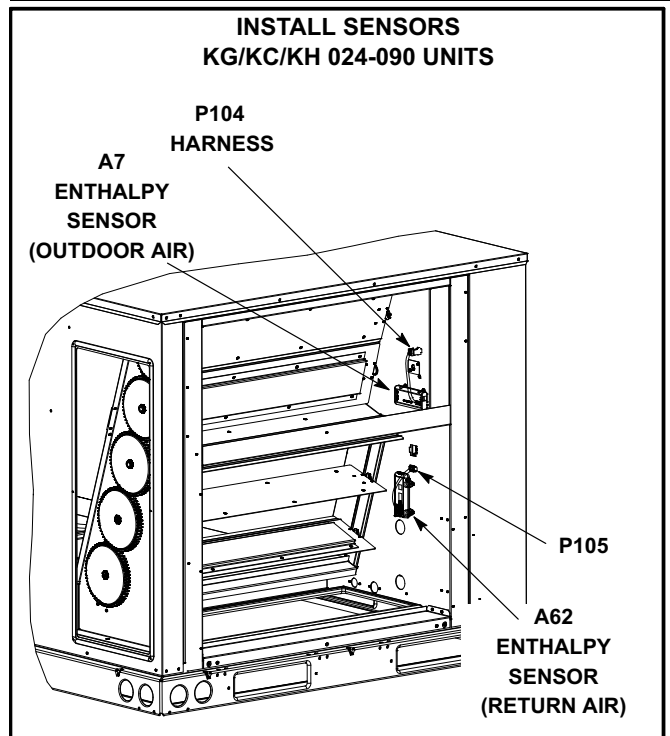
No. Of Sensors	Outdoor Air Is Enabled For Free Cooling When:
1	OA enthalpy, A7, is less than free cooling set-point (single enthalpy).
2	OA enthalpy, A7, is less than RA enthalpy, A62 (differential enthalpy).*

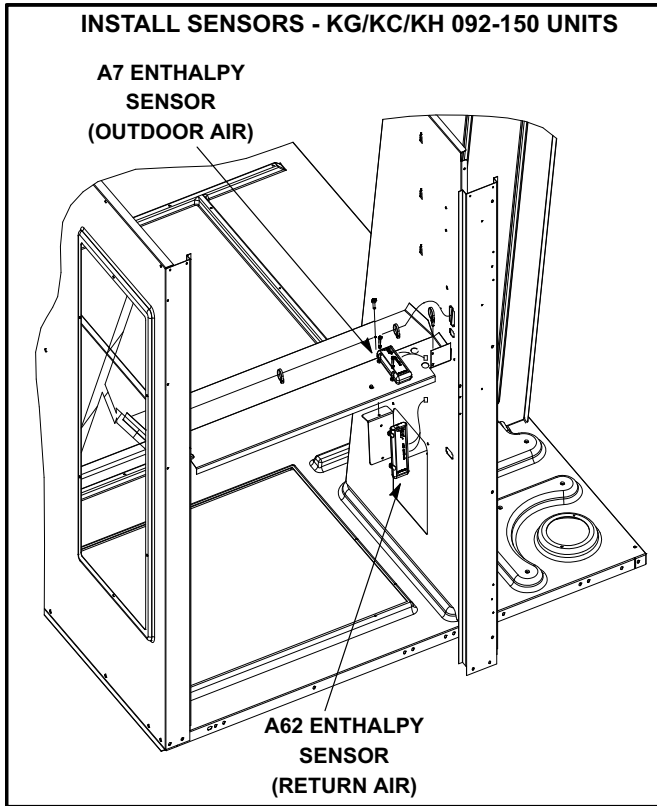
**Install Sensors**

**NOTE** - Install the return air sensor before installing optional power exhaust dampers and gravity exhaust dampers. If gravity exhaust, power exhaust, or hoods are already installed, remove from unit.

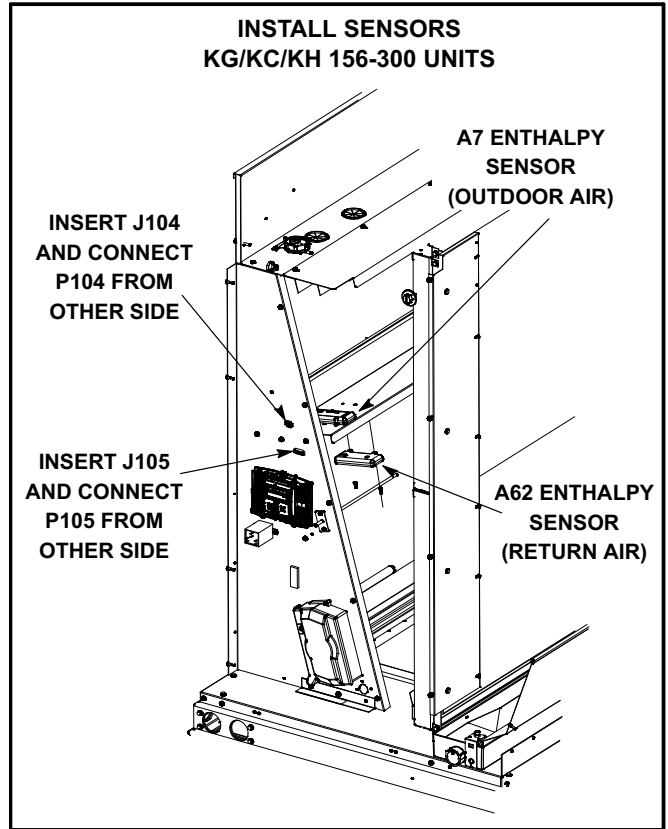
- 1- Disconnect all power to unit.
- 2- Remove unit top back panel and retain screws. If economizer is already installed, remove hood.
- 3- Install sensors as shown in the following figures:

KG/KC/KH 024-090	Figure 1
KG/KC/KH 092-150	Figure 2 and 3
KG/KC/KH 156-300	Figure 4

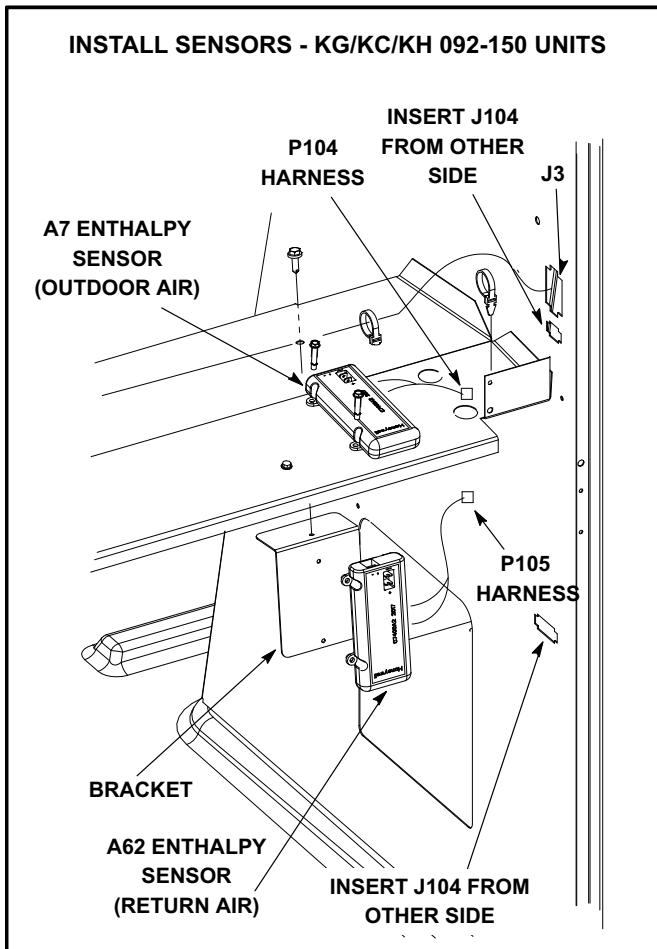




**FIGURE 2**



**FIGURE 4**



**FIGURE 3**

**Wire A7 Sensor**

Identify harnesses by markings on wires. Refer to figure 5 and 6.

- 1- Insert J104 jack into the side panel as shown in figure 7 for 024-090 units, figure 3 for 092-150 units, and figure 4 for 156-300S units.
- 2- Connect other end of J104 harness into A6 economizer control as shown in figure 5.
- 3- Connect P104 plug into J104 previously installed in side wall. See figure 1 for 024-090 units, figure 3 for 092-150 units, and figure 4 for 156-300S units.

*Note - Wiring is shown on economizer wiring diagram. See figures 9 for 024-090 units and 10 for 092-300 units..*

- 4- Connect other end of P104 harness into A7 enthalpy control as shown in figure 5.
- 5- Set DIP switch as shown in figure 8.
- 6- Discard J105 and P105 harnesses in single enthalpy installations.
- 7- Reinstall gravity exhaust damper, power exhaust, and outdoor air hood when applicable.

## Wire A62 Sensor

Note - Two kits must be ordered for differential sensing.

Identify harnesses by markings on wires. Refer to figure 5 and 6.

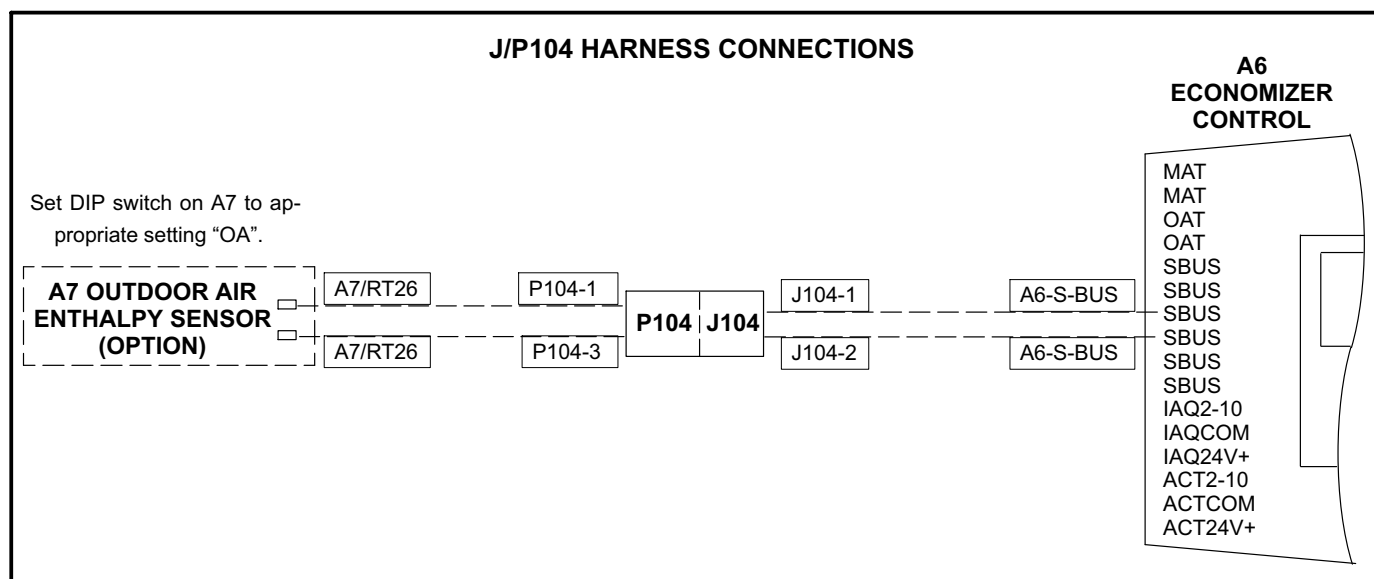
- 1- Insert J105 jack into the side panel as shown in figure 7 for 024-090 units, figure 3 for 092-150 units, and figure 4 for 156-300S units.
- 2- Connect other end of J105 harness into A6 economizer control as shown in figure 5.
- 3- Connect P105 plug into J105 previously installed in side wall. See figure 1 for 024-090 units, figure 3 for 092-150 units, and figure 4 for 156-300S units.

Note - Wiring is shown on economizer wiring diagram. See figures 9 for 024-090 units and 10 for 092-300 units..

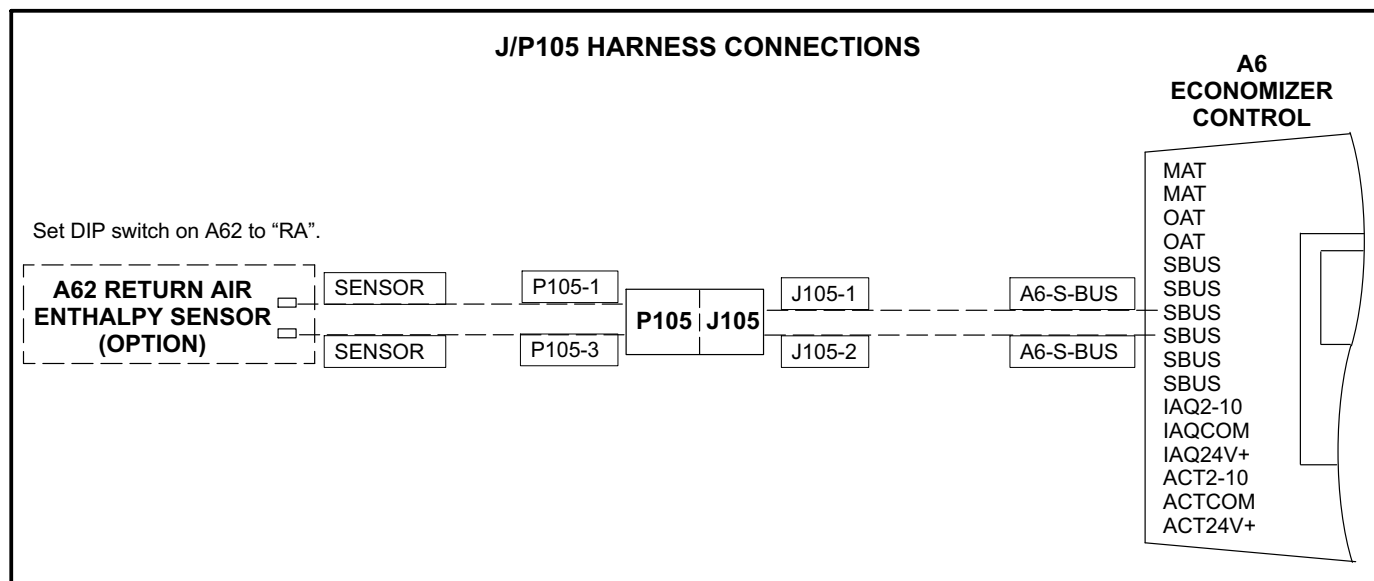
- 4- Connect other end of P105 harness into A7 enthalpy control as shown in figure 5.
- 5- Set DIP switch as shown in figure 8.
- 6- Reinstall gravity exhaust damper, power exhaust, and outdoor air hood when applicable.

## Operation

Refer to Unit Controller manual for start-up and operation.

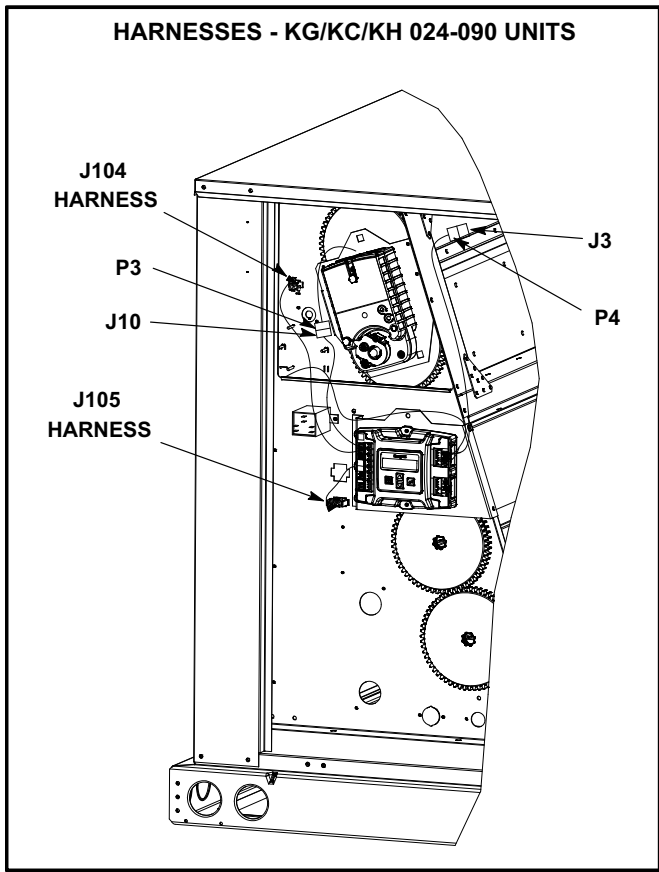


**FIGURE 5**



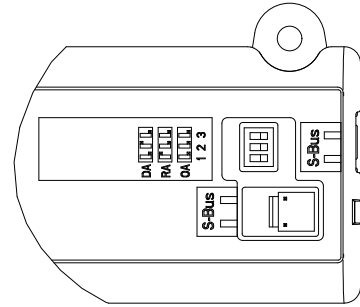
**FIGURE 6**

**HARNESSES - KG/KC/KH 024-090 UNITS**



**FIGURE 7**

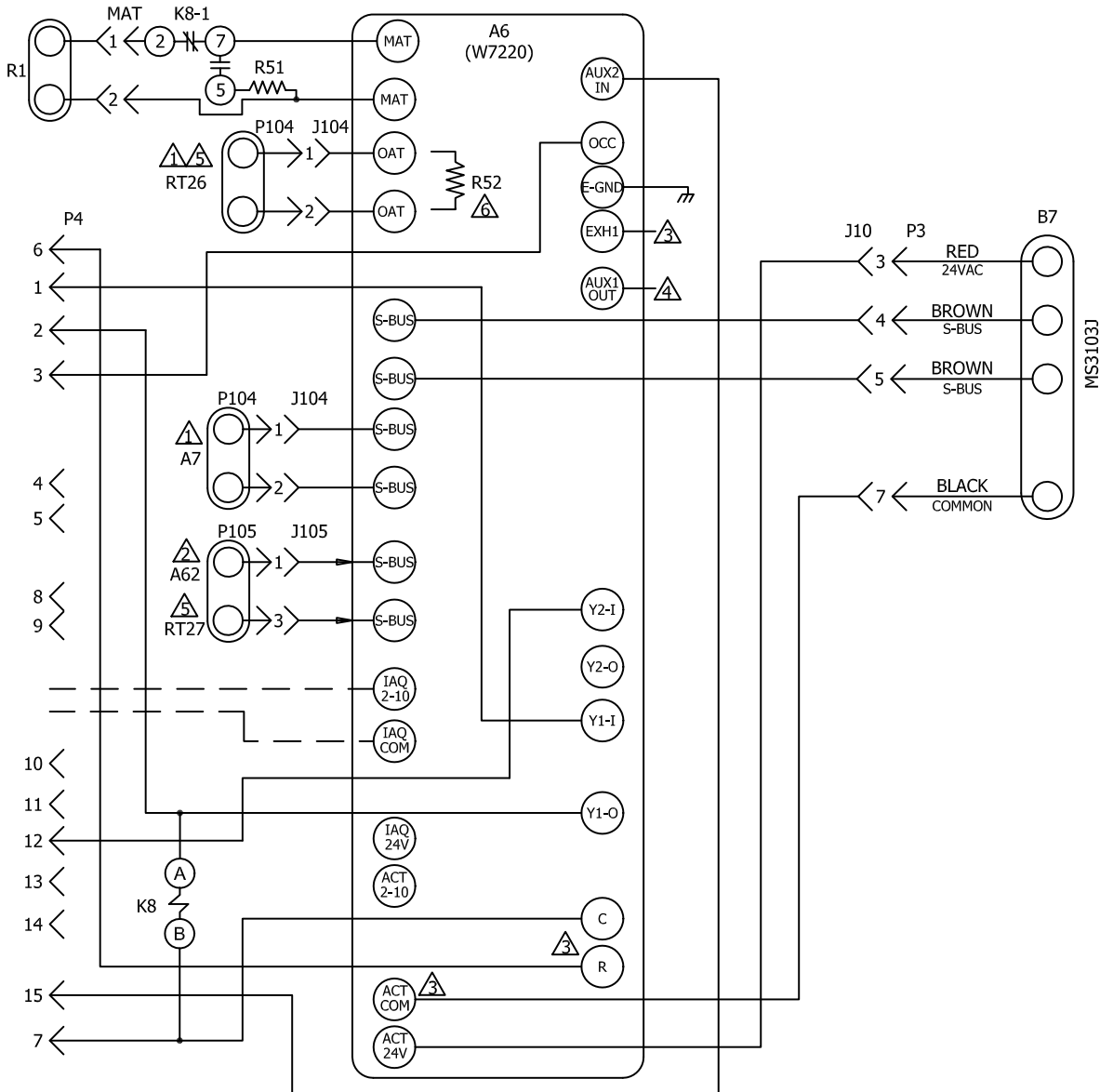
**SET SENSOR DIP SWITCHES**



USE	DIP SWITCH POSITIONS FOR SWITCHES 1, 2, & 3		
	1	2	3
RA	ON	OFF	OFF
OA	OFF	OFF	OFF

RA = RETURN AIR  
 SET DIP SWITCH PER TABLE. OA = OUTSIDE AIR

**FIGURE 8**



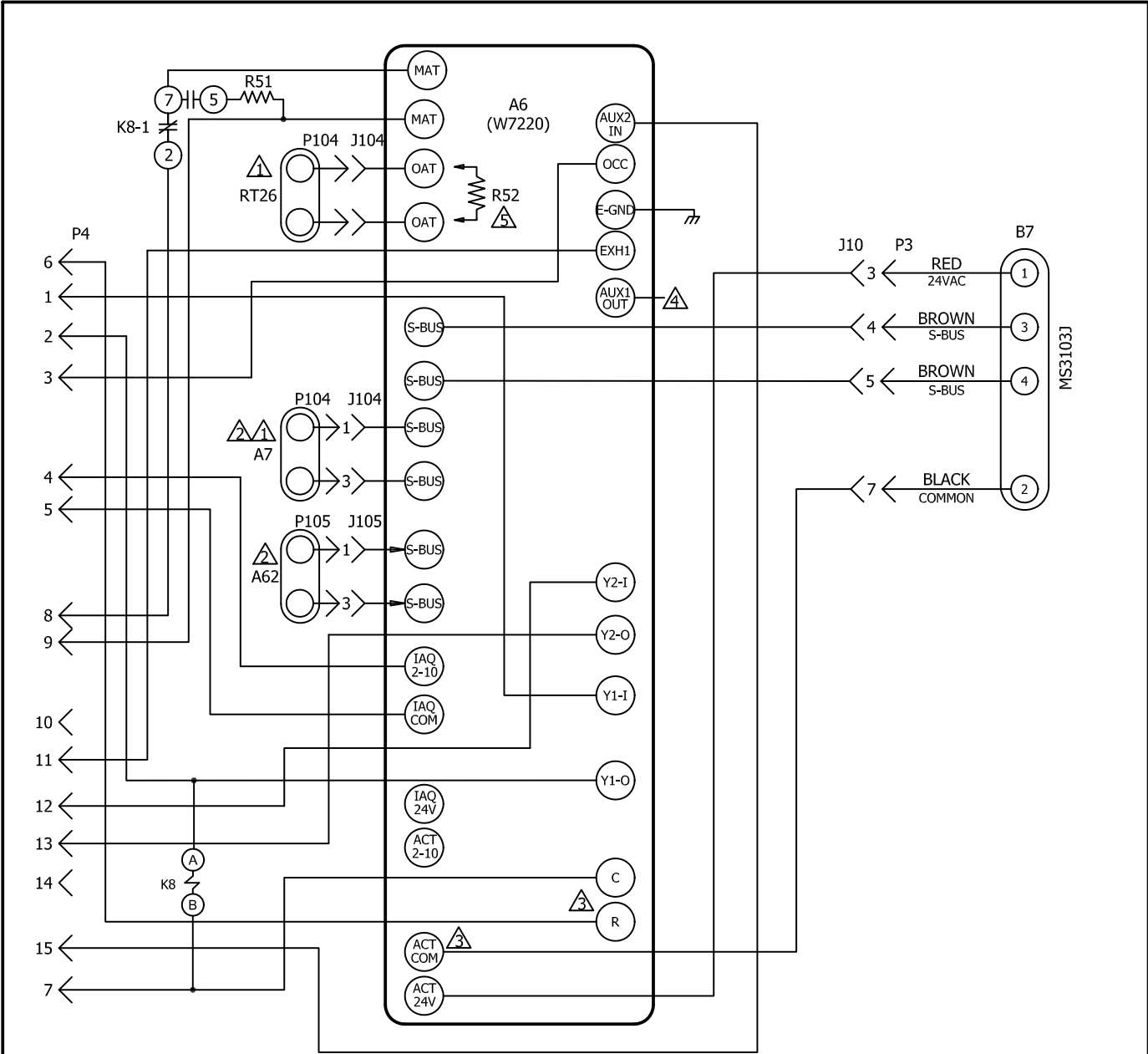
KEY	COMPONENT
A6	CONTROL - ECONOMIZER
A7	SENSOR - OUTDOOR ENTHALPY
A62	SENSOR - INDOOR ENTHALPY
B7	MOTOR - DAMPER, ECONOMIZER
J10	JACK - ECONOMIZER MOTOR
J104	JACK - SENSOR OUTDOOR
J105	JACK - SENSOR RETURN AIR
K8	TRANSFER RELAY
P3	PLUG - ECONOMIZER MOTOR
P4	PLUG - ECONOMIZER
P104	PLUG - SENSOR OUTDOOR
P105	PLUG - SENSOR RETURN AIR
R1	SENSOR - MIXED AIR
RT26	SENSOR - OUTDOOR AIR TEMP
RT27	SENSOR - RETURN AIR TEMP
R51	RESISTOR, MAT BYPASS
R52	RESISTOR, OAT BYPASS

DESIGNATES OPTIONAL WIRING  
 CLASS II FIELD WIRING

- OUTDOOR AIR TEMP SENSOR RT26 OR OUTDOOR AIR ENTHALPY SENSOR A7 MAY BE USED
- FOR DIFFERENTIAL ENTHALPY SENSING USE OUTDOOR ENTHALPY SENSOR A7 AND INDOOR ENTHALPY SENSOR A62
- REFER ALSO TO MAIN UNIT WIRING DIAGRAM SECTION C
- PROGRAMMABLE, USE FOR EXHAUST FAN 2 OUTPUT OR ERV OR SYSTEM ALARM OUTPUT
- FOR DIFFERENTIAL TEMPERATURE SENSING USE RT26 & RT27 SENSORS.
- R52 USED WITH NOVAR 2024 OR 2051 DDC CONTROLS.

10/13		WIRING DIAGRAM	10/13
		537629-01	
ACCESSORIES			
JADE CONTROL ECONOMIZER (A-BOX)			
D1		REV 1	
Supersedes		New Form No. 537629-01	

**FIGURE 9**



KEY	COMPONENT
A6	CONTROL - ECONOMIZER
A7	SENSOR - OUTDOOR ENTHALPY
A62	SENSOR - INDOOR ENTHALPY
B7	MOTOR - DAMPER, ECONOMIZER
J10	JACK - ECONOMIZER MOTOR
J104	JACK - SENSOR OUTDOOR
J105	JACK - SENSOR RETURN AIR
K8	TRANSFER RELAY
P3	PLUG - ECONOMIZER MOTOR
P4	PLUG - ECONOMIZER
P104	PLUG - SENSOR OUTDOOR
P105	PLUG - SENSOR RETURN AIR
RT26	SENSOR - OUTDOOR AIR TEMP
R51	RESISTOR, MAT BYPASS
R52	RESISTOR, OAT BYPASS

DESIGNATES OPTIONAL WIRING  
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- REFER ALSO TO MAIN UNIT WIRING DIAGRAM SECTION C
- PROGRAMMABLE, USE FOR EXHAUST FAN 2 OUTPUT OR ERV OR SYSTEM ALARM OUTPUT
- R52 USED WITH NOVAR 2024 OR 2051 DDC CONTROLS.

10/13		WIRING DIAGRAM	10/13
		537636-01	
ACCESSORIES			
JADE CONTROL ECONOMIZER (B & C-BOX)			
SECTION B			REV 0
Supersedes		New Form No. 537636-01	

FIGURE 10