

ICM326H



Wiring Reference Diagrams for
FUJITSU

AOU9C1, 9R1, 12C1, 12R1
AOU18C1, 18R1, 24C1, 24R1
AOU30C1, 24D, 22, 30, 36

Outdoor Condensing Units

ICM326H HEAD PRESSURE CONTROLS

with Optional Heat Pump Bypass



Helps prevent evaporator freeze-ups, liquid-slugged compressors, low pressure cutouts and overshoots common to on/off & pressure switch controls...

ICM Head Pressure Controls operate as temperature-sensitive motor fan speed controls. Head pressure is regulated during low ambient conditions by varying the amount of airflow through the condenser. This helps insure efficient pressure across the expansion valve, preventing costly downtime and/or loss of valuable perishable goods.

Feature Highlights

- **Integral Heat Pump Bypass Circuitry...**allows you to electronically bypass the speed control during heat pump operation.
- **Solid state 10 amp load carrying capability...**
- **Single unit controls up to 3 refrigerant circuits...**
- **Multiple Voltage Ranges:** see specifications for details.
- **Hard Start...**adjustable from 1-5 seconds. Provides full torque to the motor during startup to help ensure proper fan rotation and lubrication of bearings.
- **Low Speed Cutoff...**field adjustable. User may set the minimum RPM level at which the condenser fan should operate.
- **High Temperature Bypass...**applies full voltage to the condenser fan under normal conditions.
- **Rugged, epoxy-encapsulated package...**for greater reliability in harsh environmental conditions.
- **Integral transformer...**simplifies installation, reduces cost. Direct set up from the line voltage.

Applications

- **Ideal for "low ambient" conditions found in:**
 - Supermarkets, frozen food storage
 - Computer rooms, cooling tower fans
 - Temperature/humidity-sensitive environments

Specifications

Input/Output Voltage

- **Input/Output:** 120 or 240 VAC
- **Frequency:** 50/60 Hz
- **Power consumption:** 4 VA @ 24 VAC

Output

- **Type:** Solid State
- **Form:** Triac
- **Output current:** max.: 10 amps min.: 100 ma
- **Frequency:** 50/60 Hz
- **Voltage Drop:** 3.0 volts max.
Leakage Current: 5 ma max.

Protection

- **Dielectric Breakdown:** 2,500 volts minimum
- **Insulation Resistance:** 100 M

Control Operating Temperature

- **Operating Temperature:** -40° to 75°C
(-40° to 167°F)
- **Storage Temperature:** -40° to 85°C
(-40° to 185°F)

Setting the Cut-Out Speed

The cut-out speed knob adjusts the motor voltage range. Set the cut-out voltage knob according to the type of motor that you have.

SLEEVE BEARING MOTORS:

Set the cut-out knob to the middle of the sleeve bearing range. In this range, the motor can run down to approximately 40-50% of the full line voltage, which allows sufficient RPM for cooling and lubrication.

CAUTION

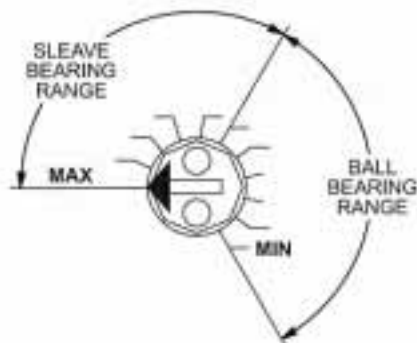
With sleeve bearing motors, it is important not to adjust outside the sleeve bearing range or bearing failure may result.

BALL BEARING MOTORS:

Set the Cut-Out knob to the MIN position in the ball bearing range. This position offers the greatest range of speed control. At the MIN setting the motor can run down to approximately 20-30 percent of the full line voltage.

NOTE: After starting at the recommended settings for either sleeve or ball bearing motors, you can fine tune the cut-out speed to achieve the desired results.

Cut-Out Speed Knob



Setting the Hard Start Speed

During the hard start mode, full voltage is applied to the motor during startup to overcome windmilling and to lubricate the bearings.

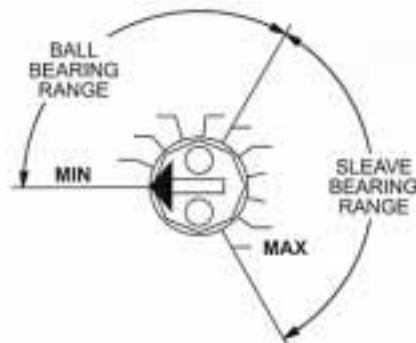
The position of the hard start knob determines the time period of the hard start mode. The knob can be adjusted between 0.1 sec. and approximately 5 sec.

Set the hard start knob according to the type of motor that you have. If you have a **ball bearing motor**, set the hard start knob to the MIN position. If you have a **sleeve bearing motor**, set the hard start knob to the middle of the sleeve bearing range. After you begin at the recommended setting, you can fine tune the hard start time within the recommended range for the type of motor you have.

It is recommended that you use the minimum possible hard start time to avoid blowing too much cold air over the condenser.

Hard start mode is activated everytime the ICM326H turns on the fan.

Hard Start Knob



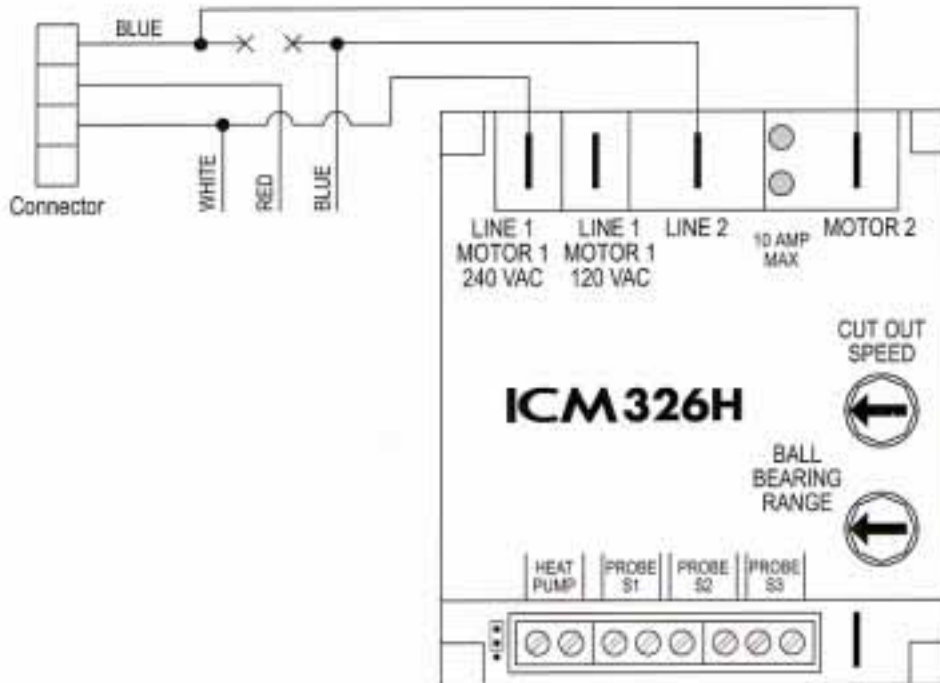
FUJITSU AOU18C1, AOU24C1 Wiring Diagram

The wiring we will be working with will be the "BLUE" lead going from terminal #5 of the 8 pin terminal block and the "WHITE" lead going from the Fan Motor Capacitor to the fan motor connector.

1. Break the "BLUE" lead and:
 - A. Route the line side of the "BLUE" lead to the terminal marked "LINE 2" of the ICM326H.
 - B. Route the load side of the "BLUE" lead to the terminal marked "MOTOR 2" of the ICM326H.

All you have basically done is wire the "BLUE" lead of the fan motor in series with the ICM326H; line voltage on terminal "LINE 2" and load to the fan motor out on terminal "MOTOR 2".

2. Now field install a wire, where the "WHITE" lead attaches to fan motor terminal block, to the "LINE1 MOTOR1 240 VAC" terminal of the ICM326H.
3. Hook up the sensor to the upper 1/3 of the condensing unit; on the same side as the liquid line.



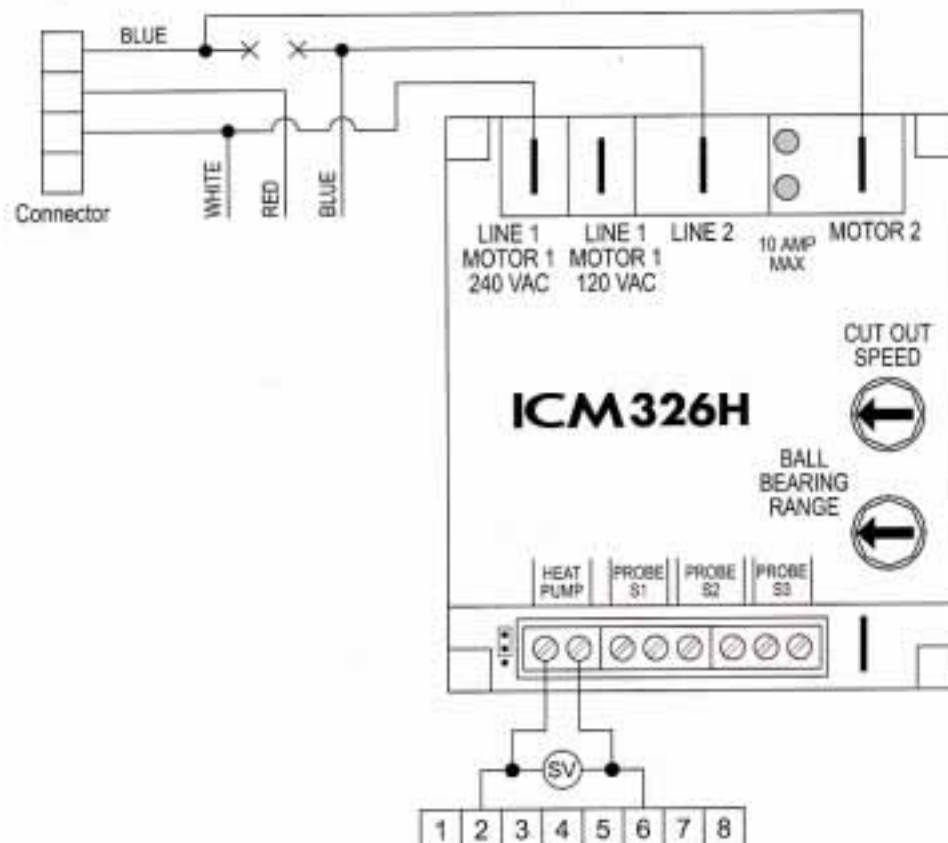
FUJITSU AOU18R1, AOU24R1 Wiring Diagram

The wiring we will be working with will be the "BLUE" lead going from terminal #5 of the 8 pin terminal block and the "WHITE" lead going from the Fan Motor Capacitor to the fan motor connector.

1. Break the "BLUE" lead and:
 - A. Route the line side of the "BLUE" lead to the terminal marked "LINE 2" of the ICM326H.
 - B. Route the load side of the "BLUE" lead to the terminal marked "MOTOR 2" of the ICM326H.

All you have basically done is wire the "BLUE" lead of the fan motor in series with the ICM326H; line voltage on terminal "LINE 2" and load to the fan motor out on terminal "MOTOR 2".

2. Now field install a wire, where the "WHITE" lead attaches to fan motor terminal block, to the "LINE1 MOTOR1 240 VAC" terminal of the ICM326H.
3. Field install wires, in parallel with the reversing valve, to the HP terminals on the ICM326H (do not adjust the Heat Pump selector pins).
4. Hook up the sensor to the upper 1/3 of the condensing unit; on the same side as the liquid line.



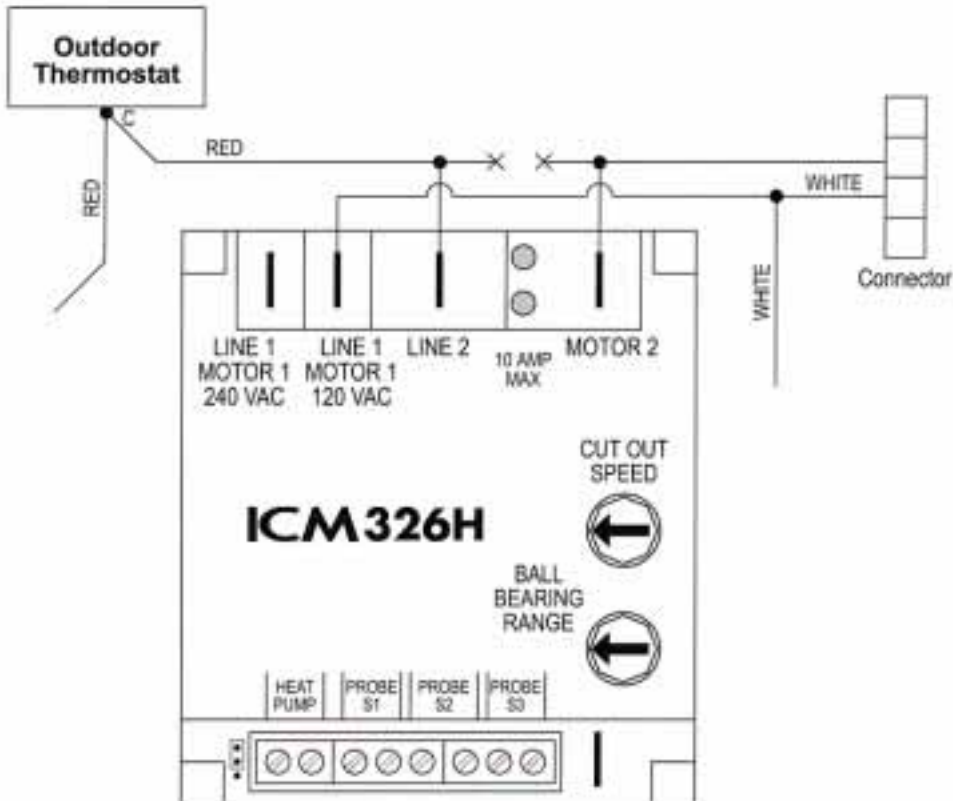
FUJITSU AOU30C1 Wiring Diagram

The wiring we will be working with will be the "RED" lead going from the "C" side of the OUTDOOR THERMOSTAT to the fan connector for the LOWER fan motor, and the "WHITE" lead going from the LOWER Fan Motor Capacitor to the LOWER fan motor connector.

1. Break the "RED" lead and:
 - A. Route the line side of the "RED" lead to the terminal marked "LINE 2" of the ICM326H.
 - B. Route the load side of the "RED" lead to the terminal marked "MOTOR 2" of the ICM326H.

All you have basically done is wire the "RED" lead of the fan motor in series with the ICM326H; line voltage on terminal "LINE 2" and load to the fan motor out on terminal "MOTOR 2".

2. Now field install a wire, where the "WHITE" lead attaches to fan motor terminal block, to the "LINE1 MOTOR1 240 VAC" terminal of the ICM326H.
3. Hook up the sensor to the upper 1/3 of the condensing unit; on the same side as the liquid line.



ICM 326H LOW AMBIENT CONTROLLER WIRING INSTRUCTIONS FUJITSU AOU22 OUTDOOR UNITS

General Installation:

The wiring we will be working with will be the "BLACK" lead going from terminal #3 of the terminal board to the fan motor, and the "WHITE" lead going from the "line side" of the run capacitor.

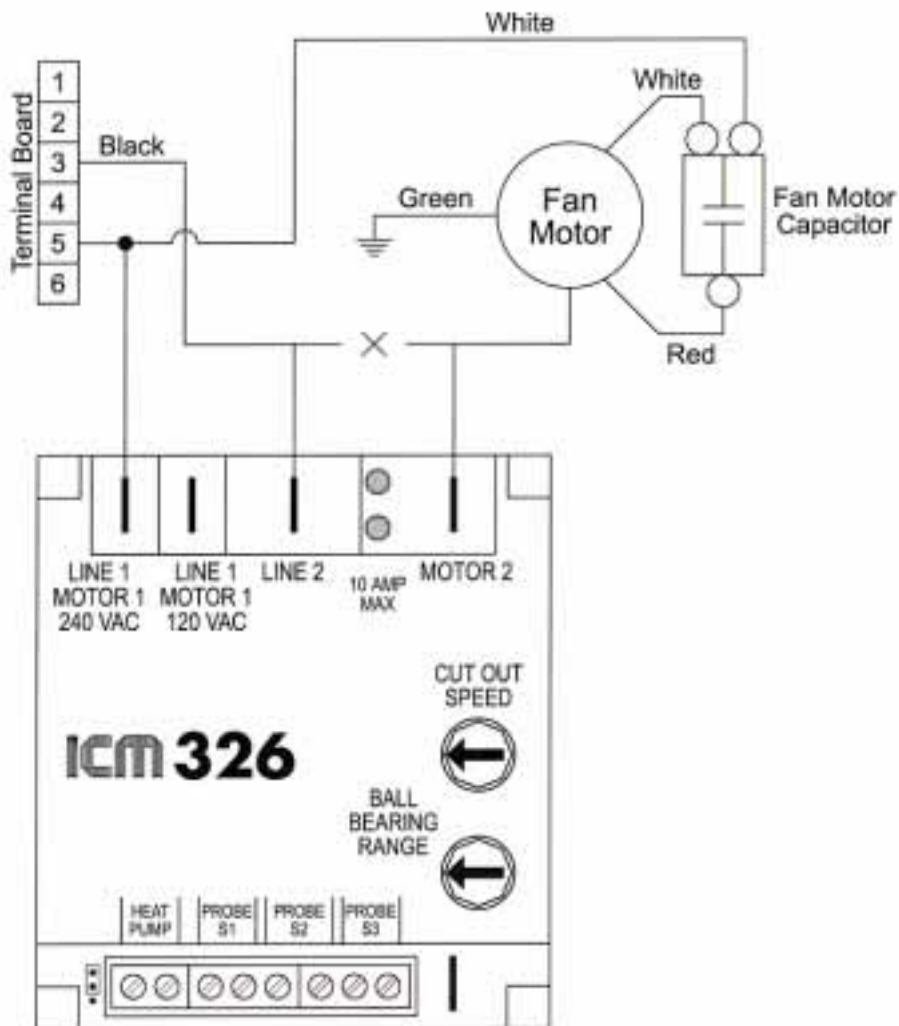
1. Break the "BLACK" lead between the terminal board and the Fan Motor and:
 - A) Route the line side of the "BLACK" lead to the terminal marked "LINE2" of the ICM326H.
 - B) Route the load side of the "BLACK" lead to the terminal marked "MOTOR2" of the ICM326H.

All you have basically done is to wire the "BLACK" lead of the fan motor in series with the ICM326H; line voltage on terminal "LINE2" and load to the fan motor out on terminal "MOTOR2".

2. Now field install a wire where the "WHITE" lead attaches to the line side of the run capacitor over to terminal "LINE1" of the ICM326H.
3. Hook up the sensor to the upper 1/3 of the condensing unit; on the same side as the liquid line.



FUJITSU AOU22 Wiring Diagram



ICM 326H LOW AMBIENT CONTROLLER WIRING INSTRUCTIONS FUJITSU AOU24D OUTDOOR UNIT

General Installation:

The wiring we will be working with will be the "BLACK/GREEN" lead going from terminal #5 of the Unit-A power relay to the fan motor, and the "WHITE" lead going from the "line side" of the run capacitor.

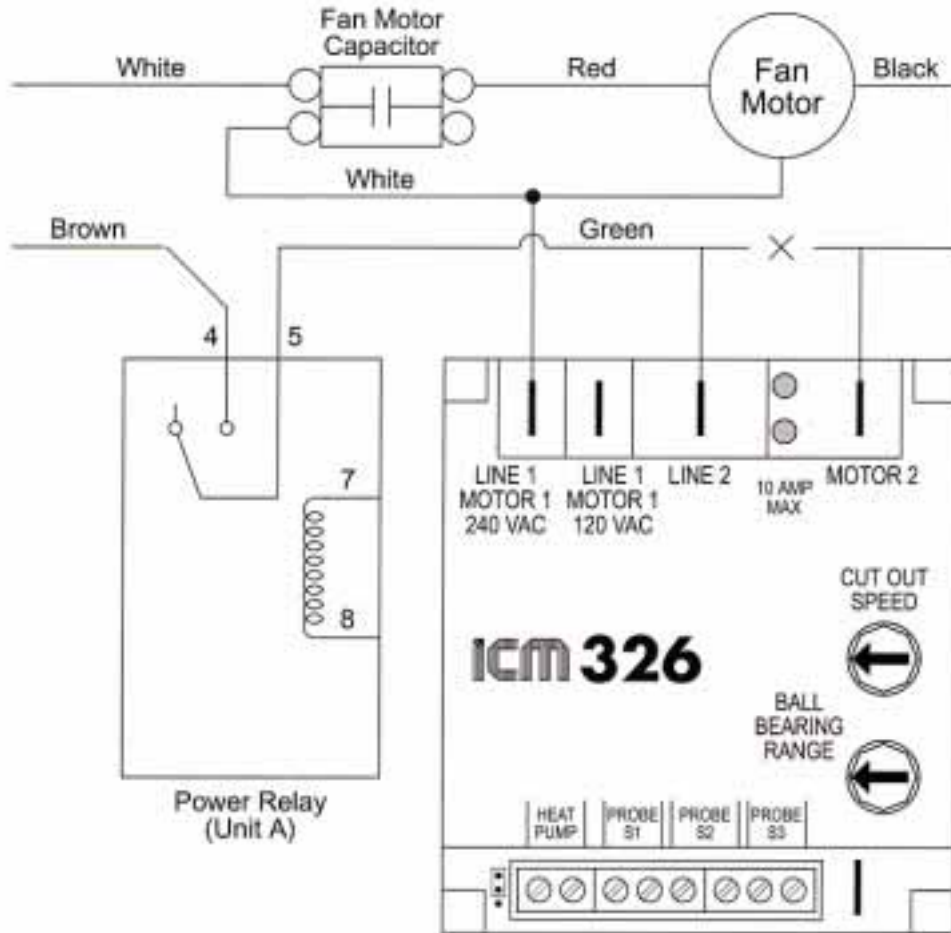
1. Break the "BLACK/GREEN" lead between the power relay and the Fan Motor and:
 - A) Route the line side of the "BLACK/GREEN" lead to the terminal marked "LINE2" of the ICM326H.
 - B) Route the load side of the "BLACK/GREEN" lead to the terminal marked "MOTOR2" of the ICM326H.

All you have basically done is to wire the "BLACK/GREEN" lead of the fan motor in series with the ICM326H; line voltage on terminal "LINE2" and load to the fan motor out on terminal "MOTOR2".

2. Now field install a wire where the "WHITE" lead attaches to the line side of the run capacitor over to terminal "LINE1" of the ICM326H.
3. Hook up the sensor to the upper 1/3 of the condensing unit; on the same side as the liquid line.



FUJITSU ASU12Dx2 and AOU24D Wiring Diagram



ICM 326H LOW AMBIENT CONTROLLER WIRING INSTRUCTIONS FUJITSU AOU30 OUTDOOR UNITS

General Installation:

The wiring we will be working with will be the "RED" leads going from terminal #3 of the terminal board to the fan motor, and the "WHITE" leads going from the "line side" of the run capacitors.

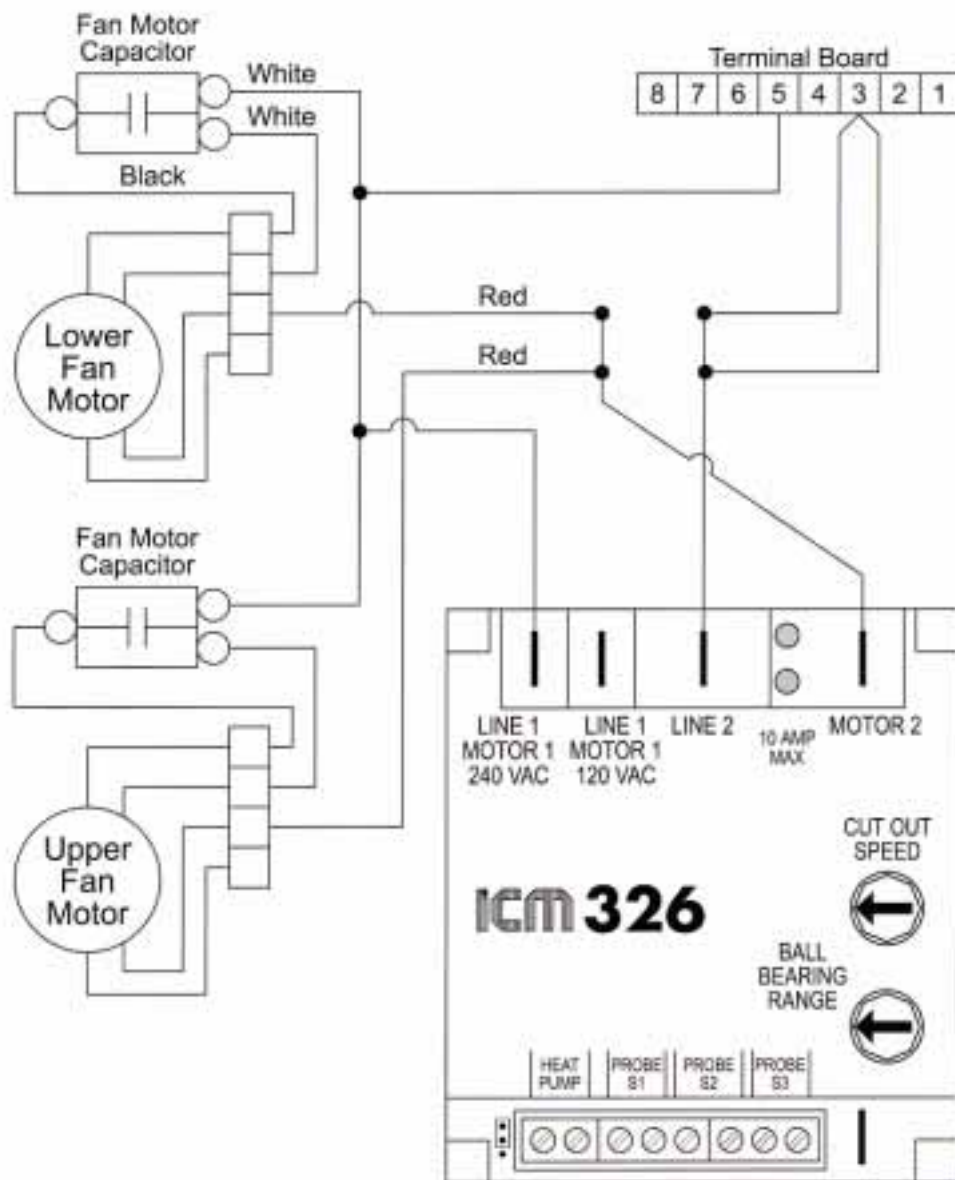
1. Break the "RED" leads between the terminal board and the Fan Motor and:
 - A) Route the line side of the "RED" leads to the terminal marked "LINE2" of the ICM326H.
 - B) Route the load side of the "RED" leads to the terminal marked "MOTOR2" of the ICM326H.

All you have basically done is to wire the "RED" leads of the fan motors in series with the ICM326H; line voltage on terminal "LINE2" and load to the fan motor out on terminal "MOTOR2".

2. Now field install a wire where the "WHITE" lead attaches to the line side of the run capacitors over to terminal "LINE1" of the ICM326H.
3. Hook up the sensor to the upper 1/3 of the condensing unit; on the same side as the liquid line.



FUJITSU AOU30 Wiring Diagram



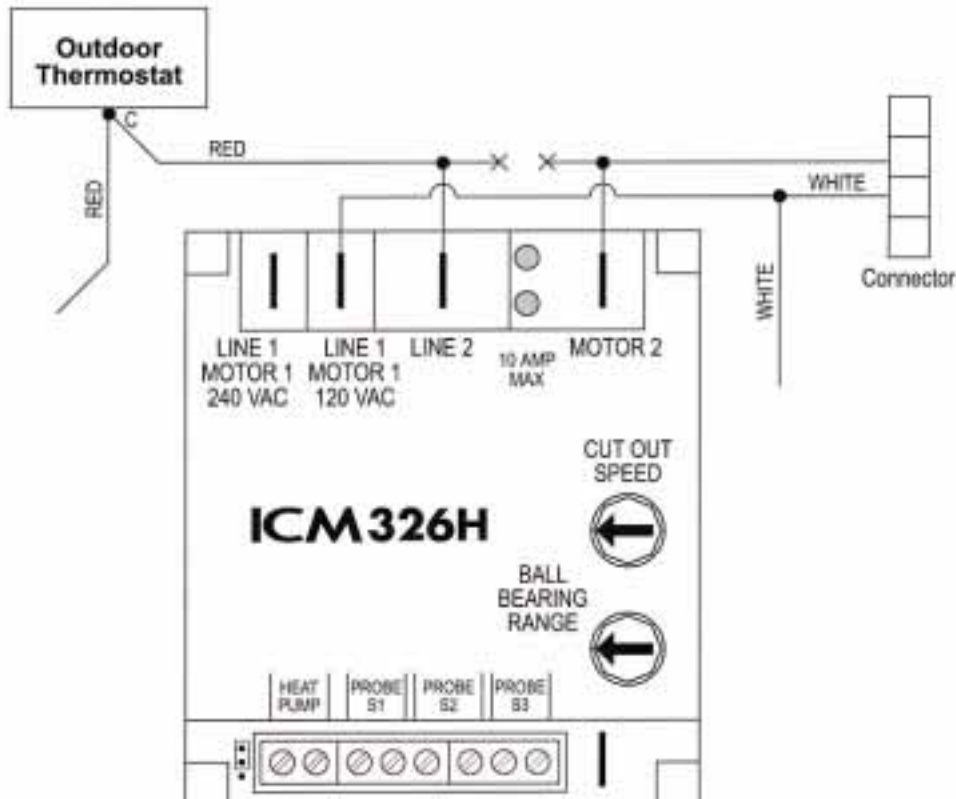
FUJITSU AOU36 Wiring Diagram

The wiring we will be working with will be the "RED" lead going from the "C" side of the OUTDOOR THERMOSTAT to the fan connector for the LOWER fan motor, and the "WHITE" lead going from the LOWER Fan Motor Capacitor to the LOWER fan motor connector.

1. Break the "RED" lead and:
 - A. Route the line side of the "RED" lead to the terminal marked "LINE 2" of the ICM326H.
 - B. Route the load side of the "RED" lead to the terminal marked "MOTOR 2" of the ICM326H.

All you have basically done is wire the "RED" lead of the fan motor in series with the ICM326H; line voltage on terminal "LINE 2" and load to the fan motor out on terminal "MOTOR 2".

2. Now field install a wire, where the "WHITE" lead attaches to fan motor terminal block, to the "LINE1 MOTOR1 240 VAC" terminal of the ICM326H.
3. Hook up the sensor to the upper 1/3 of the condensing unit; on the same side as the liquid line.



NOTES



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