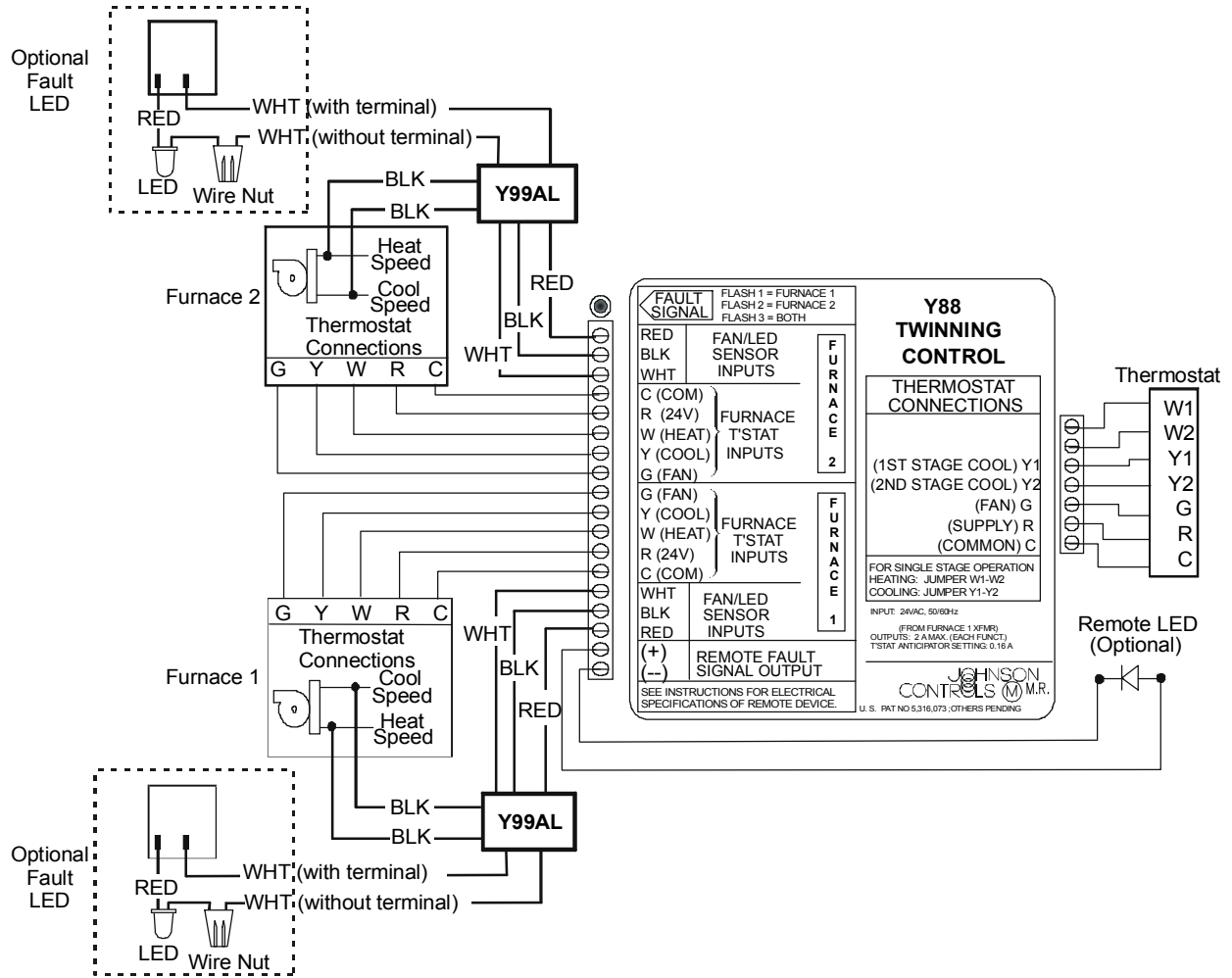



# Y99AL Fan/LED Sensor



**Figure 1: Y99AL Fan Sensor Wiring**


## Application

Two Y99AL Fan/LED (Light-Emitting Diode) sensor assemblies, one for each furnace, are included with the Y88 Twinning Control. These sensors are used to monitor the fan motors. The Y99AL sensor consists of a 25.4 mm (1 in.) black cubicle enclosure with four 305 mm (12 in.) wire leads (two white and two black) and a 4.6 m (15 ft.) cable. The Y99AL is a replacement part if one of the Fan/LED sensors supplied with the Y88 is damaged, missing, or defective. The Y99AL is not approved for any other application.

 **CAUTION:** **Equipment Damage Hazard.** Failure to incorporate the Y99AL on a single-speed fan motor will result in damage to the sensor and prevent proper system operation.


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## **Installation and Wiring**

 **WARNING:** **Shock Hazard.** Avoid electrical shock and equipment damage by disconnecting electrical power to both furnaces before proceeding.


These instructions are intended as a guide for qualified personnel installing Johnson Controls ignition controls and accessories. All wiring should be in accordance with the National Electrical Code (NEC) and local electrical codes.

## **Replacement Procedure**

 **CAUTION:** **Equipment Damage Hazard.** Label all wires prior to disconnection when servicing controls. Wiring errors can cause damage to the equipment. Verify proper operation after servicing.

Perform the following procedure to replace a Fan/LED sensor assembly.

1. Turn off power to both furnaces.
2. Disconnect and label the wires from the Fan/LED sensor assembly and remove it from the appliance.
3. Taking into account the wiring connections, choose a convenient mounting location for the Y99AL. It may be mounted on any clean, flat surface using the affixed adhesive foam tape.
4. Route the 3-wire cable (red/black/white) from the Y99AL along the same path as the thermostat cable to the Y88 Twinning Control.
5. Connect the 3-wire cable to the indicated colors of the Fan/LED Sensor Inputs of the appropriate furnace section of the Y88 Twinning Control (see Figure 1). The cable may be cut to a convenient length.

 **CAUTION:** **Equipment Damage Hazard.** Do not choose the white “neutral” wire. Damage to the sensor will result.

6. Locate any two fan motor speed wires (other than white) that are connected to the furnace control (e.g., red, black, or blue), even if they are not used and connected to a “PARK” terminal.

7. Remove the chosen wires from the terminals on the furnace control and connect the two black wires of the Y99AL with “Y” shaped terminals.
8. Connect the two removed fan motor speed wires to the appropriate “Y” shaped terminals. Ensure that the fan speed wire colors correspond to the “Y” terminals of the original connection.

### **Fault Signal LED Wiring (Optional)**

Follow this procedure to transmit the diagnostic LED signals from the furnace control to the Y88 Twinning Control.

Note: This option can only be used if the furnace control uses a plug-in remote LED. If this option is not used, tape the ends of both white wires on the Y99AL to avoid accidental connections and continue by following the *Checkout and Startup Procedure*.

1. Unplug the negative wire that connects from the furnace control to the remote LED. Cut the connector off and strip 6.35 mm (1/4 in.) of insulation from the wire.
2. Connect this wire to the stripped white wire from the Y99AL using the wire nut provided (see Figure 1).
3. Plug the white wire with the terminal from the Y99AL onto the furnace control using the terminal where the negative wire was removed.

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### **Checkout and Startup Procedure**

After completing the entire installation, perform the following test to determine if the Y99AL is functioning properly.

1. Set the system thermostat to a call for heat, cool, or manual fan. This will bring the fan to a steady run condition.
2. Without disconnecting the Y99AL from the twinning control, measure the AC voltage across the 6.35 mm (1/4 in.) terminals of the Y99AL. The voltage should be greater than or equal to 8 VAC. If the voltage measured between the terminals is less than 8 VAC, check the integrity of the wires and connections to the fan motor. If the wiring is correct, it may be necessary to change the Y99AL motor speed connection. Refer to Steps 6 through 8 in the *Replacement Procedure* section.

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### **Repairs and Replacements**

Do not attempt field repairs. Use only a direct or manufacturer recommended replacement sensor assembly. For a replacement sensor assembly, contact the original equipment manufacturer or a Johnson Controls distributor.

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# Notes



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