37HS
Electric Interlock

Installation and Operating Instructions

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GENERAL

Electric interlock for 37HS Moduline® terminals is a method to allow the sequencing of a separate heating system with Moduline cooling to condition the space. In such cases, where VAV (variable air volume) cooling terminals are used in conjunction with a separate heating system, such as perimeter heating, it is necessary to prevent the heating equipment from turning on before the Moduline cooling system turns off. The addition of a differential pressure switch to the unit controls makes this possible. When the switch detects that control pressures are approaching a shutoff condition (cooling load satisfied), it closes a set of contacts. This allows the heating system to operate as the heating thermostat dictates.

A standard electric interlock control package, package no. 37CM900922, is available for this purpose. The contents of the package are shown in Fig. 1.

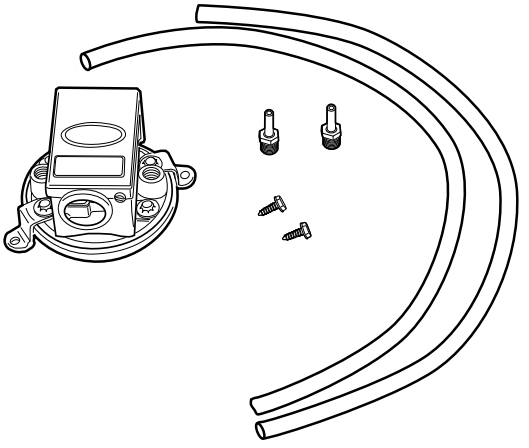


Fig. 1 — Electric Interlock Package

The electric interlock package employs a differential pressure switch to signal the separate heating system. (Pressure switch used is Carrier Part No. HK06WC020; Dwyer Part No. is 1910-1.)

This package may be used with the standard VAV or CV (constant volume) 37HS system-powered control packages and is ordered separately. Installation of the system-powered controls is covered in installation instructions found in those packages.

Table 1 identifies the standard packages employed with system-powered controls and electric interlock.

Table 1 — Control Packages Required for Electric Interlock

SYSTEM-POWERED CONTROL FUNCTIONS	MODULINE TERMINAL UNIT NO.	CONTROL PACKAGE NO.
VAV Cooling/Electric Interlock with Universal Diffuser Thermostat Control Package	37HS1, 37HS2, 37HS4	37HS900005 37CM900922
VAV Cooling/Electric Interlock with Diffuser Thermostat	37HS1	37HS900001 37CM900922
	37HS2	37HS900002 37CM900922
	37HS4	37HS900004 37CM900922
VAV Cooling/Electric Interlock with Wall Thermostat	37HS1, 37HS2, 37HS4	37HS900003 37CM901012 37CM900922

VAV — Variable Air Volume

INSTALLATION

The completed installation is shown in Fig. 2. Table 2 shows connection arrangements.

Installation of Pressure Switch

1. Install threaded fittings found in the package in the tapped holes of the differential pressure switch, using a nonhardening thread sealer to ensure air-tightness.
2. Refer to Fig. 3 and drill two 5/32-in. holes in the Moduline® terminal plenum side.
3. Remove the cap from the auxiliary bellows port of the filter (see Fig. 4).
4. Push the 11/16-in. long piece of 1/4-in. OD FR (fire retardant) tubing (provided in package) onto the bellows port (Fig. 4).
5. Push one end of a piece of 3/16-in. ID rubber tubing over the 1/4-in. OD FR tubing (Fig. 5), and the other end of the rubber tubing onto the pressure switch ''LO'' port.
6. Drill a 5/16-in. hole in the plenum side near the pressure switch.
7. Connect a 3/16-in. ID rubber tube to the ''HI'' port of the pressure switch and insert the other end of the tube approximately 1 in. into the plenum. Seal tube to plenum side with mastic.

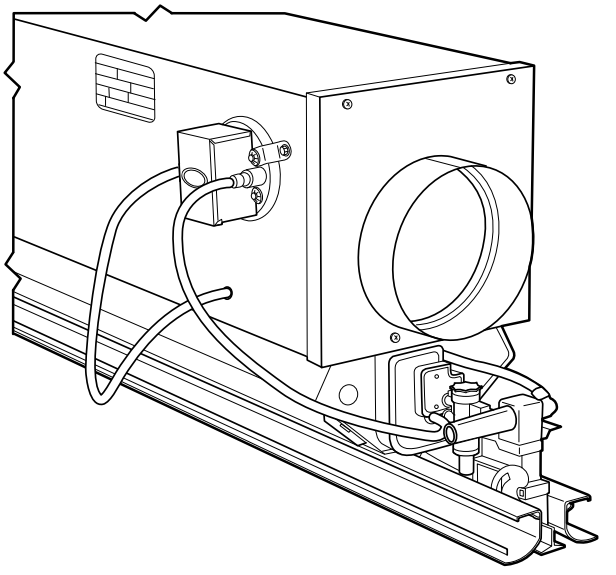
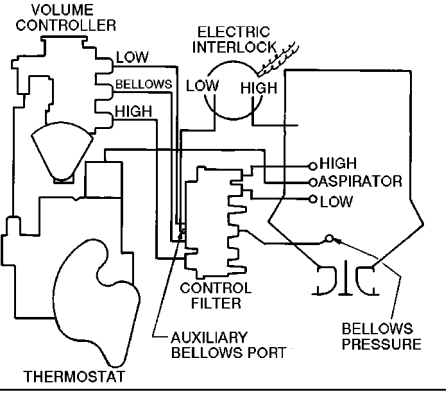
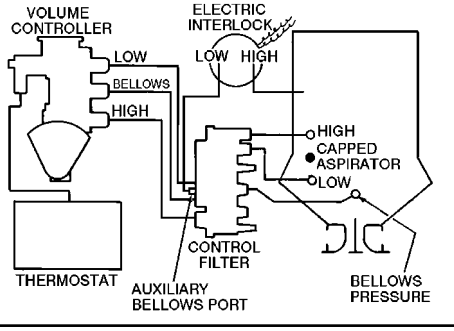


Fig. 2 — Electric Interlock Installed on Moduline Terminal

Table 2 — Connection Arrangements

FUNCTION	ARRANGEMENT CIRCUIT
SYSTEM POWERED **VARIABLE VOLUME COOLING** **DIFFUSER THERMOSTAT** **ELECTRIC INTERLOCK TO FAN COIL OR BASEBOARD HEATING**	
SYSTEM POWERED **VARIABLE VOLUME COOLING** **WALL THERMOSTAT** **ELECTRIC INTERLOCK TO FAN COIL OR BASEBOARD HEATING**	

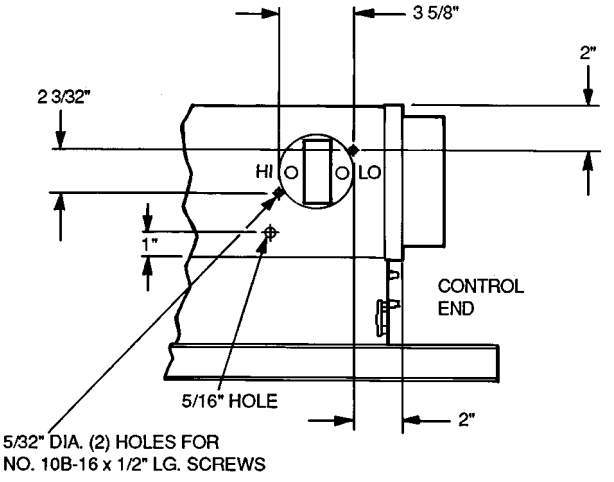


Fig. 3 — Holes for Mounting Pressure Switch

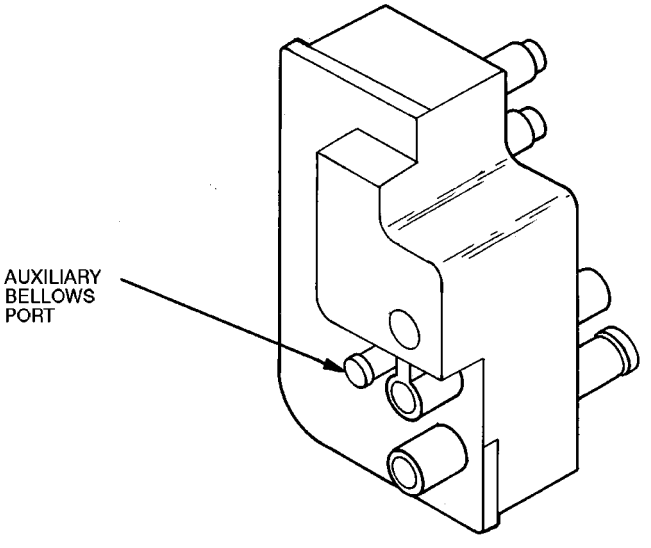


Fig. 4 − 37HS Filter

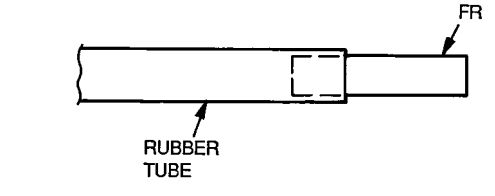


Fig. 5 — Tubing Connections

Adjustment of Pressure Switch — Refer to Fig. 6.

1. Disconnect tubing to ''LO'' port of pressure switch; leave port open.
2. Disconnect tubing to ''HI'' port of pressure switch and connect a source of pressure to the port.
3. Obtain a 0.30 in. wg pressure in tubing to ''HI'' port. Turn adjustment screw until the electric switch on the pressure switch is heard to close.
4. Disconnect tubing from pressure source and reconnect according to installation instructions given above.

Electrical Connections — Figures 7-10 illustrate possible wiring connections for the electric interlock. These diagrams illustrate possible applications for the device and are not meant to be actual wiring diagrams.

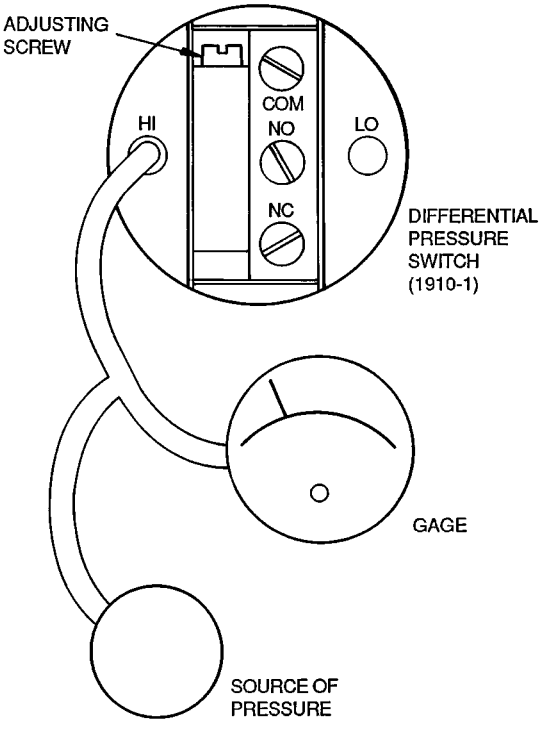


Fig. 6 — Adjusting Pressure Switch

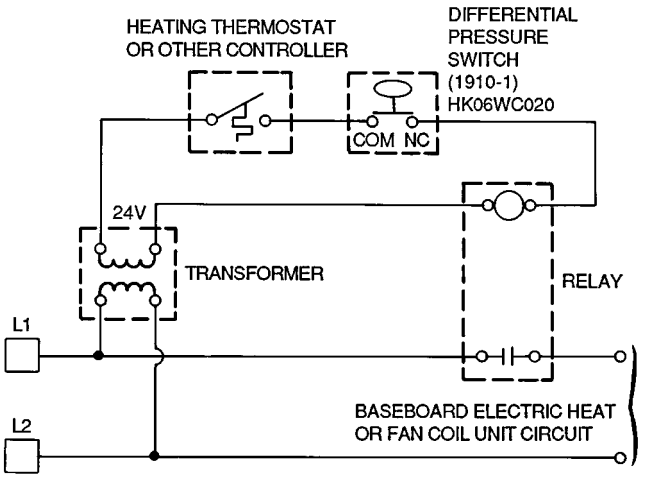


Fig. 7 — Typical Wiring for Electric Interlock with Baseboard Electric Heat

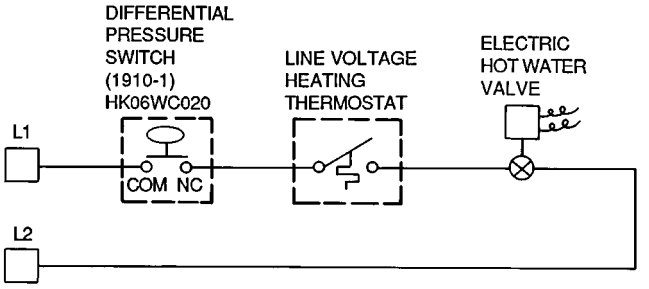


Fig. 8 — Typical Wiring for Electric Interlock with Electric Hot Water Valve

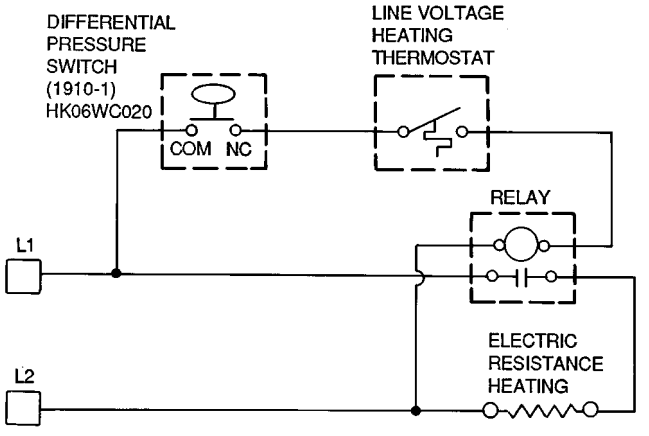


Fig. 9 — Typical Wiring for Electric Interlock with Electric Resistance Heating

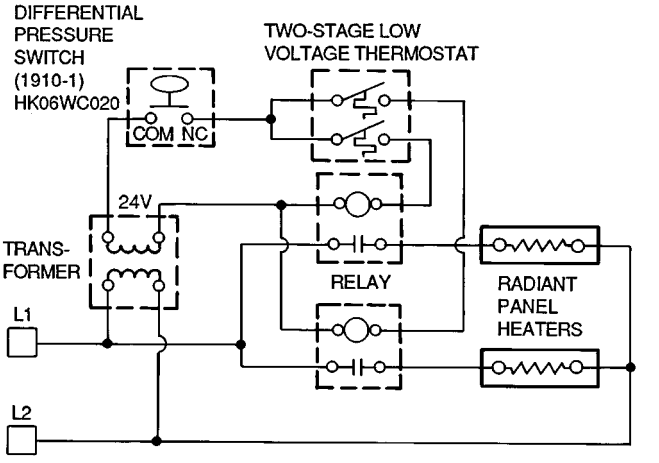


Fig. 10 — Typical Wiring for Electric Interlock with Radiant Panel Heaters

OPERATION

The electric interlock switch compares the bellows pressure with the plenum pressure, as a practical means of detecting the operating level of the unit. When the unit is delivering supply air, the bellows pressure is significantly lower than the plenum pressure and the electric interlock (differential pressure) switch is open, interrupting the power supply to the heating system. When the unit is shut off, the pressures are approximately equal and the switch closes, allowing the heating system to be energized.