

INSTALLATION INSTRUCTIONS FOR MODEL HAN-L4/PCB-043L4 MICROPROCESSOR AIR CONDITIONING SYSTEM CONTROLLER

APPLICATION

The HAN-L4 microprocessor air conditioning controller is suitable for installation with all split or one piece packaged air conditioning units. The HAN-L4 will operate with reverse cycle, cool/electric element heat or add on cooling systems used with warm air furnaces and chilled water/hot water fan coil units. Dip switches located on the rear of the HAN-L4 wall control allow the control set up to be changed to suit the installed equipment.

The HAN-L4 is supplied with the control dip switches set for reverse cycle operation.

PACKING CHECKLIST

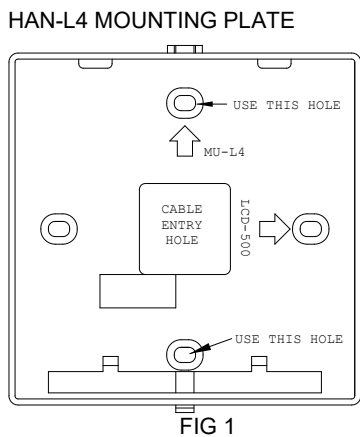
The HAN-L4/PCB-043L4 when supplied contains the following items:

- HAN-L4 Room wall control and mounting plate.
- PCB-043L4 Power relay board.
- 10 metre interconnecting lead with quick connect plugs at each end of lead. (25 metre extended interconnecting lead optionally available).
- Installation instructions / Wiring diagram.

INSTALLATION PROCEDURE

A) HAN-L4 ROOM WALL CONTROL.

The HAN-L4 is supplied with a separate wall mounting plate which is fastened to the wall and allows the control to be installed with all fastening screws concealed.



Check the wall where the HAN-L4 is to be located is flat and true before fastening the wall mounting plate. Fixing the mounting plate to a distorted surface may damage the control.

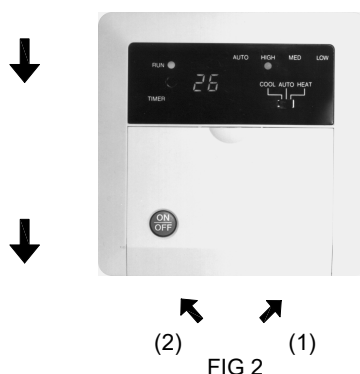
Fasten the wall mounting plate by the screw holes as indicated in FIG 1. Always use the top and bottom holes as indicated. It is essential to use the lower hole to provide sufficient support to the mounting plate when removing the HAN-L4.

Drill hole in wall to allow cable entry.

Install interconnecting cable supplied. Fill around cable with foam or cover hole with PVC tape to prevent draft from wall cavity affecting control operation.

To install HAN-L4 onto mounting plate, locate the pegs on the top of the control with the recesses in the mounting plate. Carefully press in the bottom of the control to engage the lower fasteners.

HAN-L4 REMOVAL (For service or adjustment) FIG 2



To remove HAN-L4 from the wall mounting plate after installation, place one hand on the control and exert downward pressure.

Place tip of small flat blade screw driver under the bottom edge of the HAN-L4 between sensor and edge of control (1) and twist softly.

Repeat on the bottom edge on the other side of control (2) and the HAN-L4 will be released from the mounting plate.

Lift the HAN-L4 from the mounting plate to access the interconnecting lead plug and dip switches.

B) PCB-043L4 (PCB) POWER RELAY MODULE

The power relay module can be located at the outdoor (condenser) unit or at the indoor (fan coil) unit. Install the PCB in a well ventilated location where it will not be exposed to moisture or high temperatures.

Outdoor (condenser) unit installation.

Locate the PCB in the electrical box or a suitable location for electrical equipment with adequate weather protection. Do not locate in leaving condenser air stream as the excessive heat in summer could affect control operation.

Indoor (fan coil) unit installation.

Locate the PCB in a suitable location for electrical control equipment. Do not install the PCB where it will be subject to the air leaving the indoor coil. On the cooling cycle, the leaving air can be at a near saturated condition and could cause condensation/moisture accumulation on the PCB resulting in damage to the PCB. During winter operation high temperatures in the fan coil can be experienced which could affect control operation.

If the fan coil unit does not have an external electrical box, install the PCB in the ventilated enclosure (Part no. – PBEC-1) available from your control supplier.

PCB-043L4 CONNECTION LAYOUT

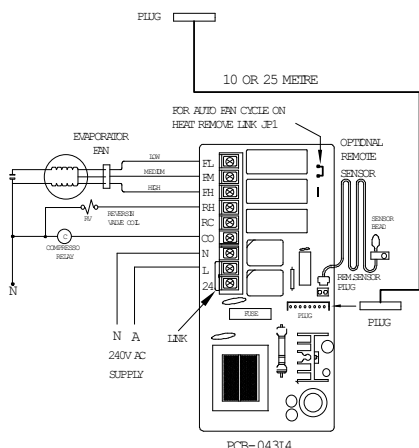


FIG. 3

After installing the PCB-043L4 connect the 240V active to the terminal “L” and the neutral to terminal “N”. Check the polarity is correct with the active to the “L” terminal or the control will not function correctly.

Connect the control outputs to the following terminals:

- Term. “CO” Compressor contactor.
- “RH” Reversing valve connection for A/C units with RV energised on the heat cycle.
- Term. “FL” Indoor fan Low speed connection.
- “FM” Indoor fan Medium speed connection.
- “FH” Indoor fan High Speed connection.

Note: Term. “RC” Is reversing valve connection for units that energise the reversing valve on the cool cycle.

HAN-L4/PCB-043L4 Microcontroller DIP Switch Settings and Service Information.

DIP SWITCH SETTINGS (FIG 4)

FUNC.	TIME	HEATING	FAN SPEED	SWING DAMP	DISPLAY	FAN COIL	ROOM TEMP	ROOM SNSR	REMOTE SNSR
SW No.	1	2	3	4	5	6	7	8	9
ON	Service	Electric	3	No	°F	Yes	ON	ON	ON
OFF	Normal	Rev Cycle	2	Yes	°C	No	OFF	OFF	OFF

NOTE: Bold letters & figures in the above table indicate standard (default) settings for reverse cycle operation.

The DIP switches are located in the room controller and are accessed by removing the control unit back cover or if the controller is mounted, remove the control from the wall.

DIP switch settings as indicated above are the normal settings when the control is used on a reverse cycle air conditioning system.

Before altering DIP switch settings turn the system **OFF**, by pressing stop button on the control.

DIP SWITCH FUNCTION:

1 Timer

- OFF (S) Sets the CPU's internal timing functions to Normal (Slow) (*default setting*).
- ON (F) Sets the CPU's internal timing functions to fast. Shortens all timing sequences. Use this setting for service and troubleshooting or setting up or calibrating the control.

Note: Caution must be taken that the switch is returned to the normal (OFF) position after servicing, as this directly influences all safety and user-comfort time delays.

2 Heating

- OFF (HP) For Heat Pump Systems, provides 4 Way Valve delay, Cold Draft Inhibit, etc. (*default setting*).
- ON (RE) For DX system with Resistive Element Heating, provides Fan Run-On etc.

3 Fan Speed

- OFF (2) Sets the control up to drive a 2 speed Indoor Fan **HIGH-LOW-AUTO**.
- ON (3) Sets the control up to drive a 3 speed Indoor Fan **HIGH-MED-LOW-AUTO** (*default setting*).

4 Swing/Zone

- OFF** (YES) Sets the control up to drive a 2 speed Fan plus Swing relay. Do not use with standard model supplied.
ON (NO) Sets the control up to drive a 3 speed Fan plus Swing damper (*default setting*).

5 Displays

- OFF** (°C) Sets the Temperature display to °C (*default setting*).
ON (°F) Sets the Temperature display to °F.

6 Cooling (Fan Coil System or D.X. System)

- OFF** (DX) For DX cooling system, provides compressor protection, etc (*default setting*).
ON (CW) Straight Heat/Cool Controller - No safety or user-comfort Time Delays.

7 LED Temperature Display (Selector to display or suppress room temperature)

- ON** With room temp display. Displays room temperature during operation.
OFF Suppresses room temp display. Shows only set point and timer setting.

8 Sensor in HAN-L4 Wall Control (Switches sensor off if only remote sensor required)

- ON** Temperature sensor in HAN-L4 wall control active (on).
OFF Temperature sensor in HAN-L4 wall control disabled (switched off).

9 Remote sensor (Switches remote sensor off if only sensor in wall unit required)

- ON** Remote sensor active (on).
OFF Remote sensor disabled (switched off).

SENSOR (Temperature) AVERAGING

When Dip SW 8 and Dip SW 9 are both switched on, the control will average between the sensor in wall control and the remote sensor.

DISPLAY CALIBRATION

All controllers are factory calibrated and tested prior to shipment. However, should the display be out of calibration this is field adjustable. To calibrate the control obtain a copy of service bulletin number CC-01/98.

Before calibrating the control check the following.

- 1) Is a draft of air entering the rear of the control from a cavity wall through the cable hole in the control mounting plate. Cover the cable entry hole with PVC tape (do not use aluminium or silver foil tape).
- 2) Is the control mounted on an external wall subject to cold or heat which could be influencing sensor on bottom of the control.

INDOOR FAN OPERATION ON HEAT CYCLE

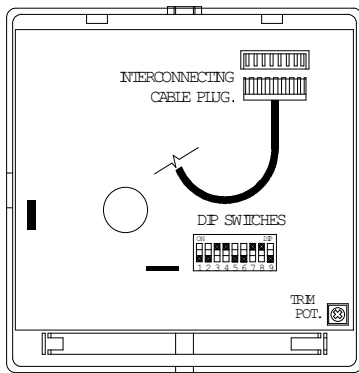
The HAN-L4/PCB-043L4 is supplied with the indoor fan to stop when the compressor stops on the heat cycle.

INDOOR FAN OPERATION

On the heat cycle the HAN-L4/PCB-043L4 controller automatically stops the indoor fan when the compressor stops on the heat cycle. The control provides a cold draft inhibit cycle as a 2 stage fan delay cycle is incorporated on the restart on heat. When the compressor restarts on the heat cycle the indoor fan has a 7.5 second start delay before starting on low speed. After a further 18 seconds the fan moves to medium or high speed as selected.

CONTINUOUS FAN ON HEAT OPTION (Refer Fig 3)

For installations requiring continuous fan on heat, a jumper (JP1) is located on the PCB-043L4 power relay board (PCB). For continuous fan on heat the commissioning technician needs to move the jumper JP1 to bridge the 2 JP1 pins. The fan will then run continuously on heat with the jumper pins bridged.



Rear view of HAN-L4 wall control without rear mounting plate showing location of interconnecting cable plug, dip switches and trim pot.

Turn power to control off before changing dip switch settings.

Turn power off before unplugging interconnecting cable.