

HCFDC Ceiling Fan Automatic Speed Controller

INSTALLATION INSTRUCTIONS

1. Install the control in a well ventilated area where the ambient temperature does not exceed 40°C.
2. Ensure the control is securely mounted.
3. Route the cables through the knock outs in the bottom of the enclosure and ensure electrical connections are correct (in accordance with the diagrams shown).
4. Ensure the 'On/Off' switch is in the 'Off' position, the 'Automatic/Manual' switch is in the 'Manual' position. Rotate the control knob, on the front panel fully anti-clockwise.
5. Switch on mains supply. Switch on the speed controller.
6. Hardstart - the control applies full power to the load for a few seconds before dropping back to minimum speed.
7. Rotate the speed control knob fully clockwise and check the fan accelerates to full speed.
8. **Minimum Speed** - if the minimum speed requires adjustment, firstly ensure the front panel rotary knob is set fully anti-clockwise then remove the front panel to access the 'MINIMUM' preset potentiometer. To increase minimum speed rotate the preset pot clockwise and anticlockwise to decrease speed (See 'controls' 5).
9. **Maximum Speed** - if the maximum speed requires adjustment, firstly ensure the front panel rotary knob is set fully clockwise, remove the front panel to access the 'MAXIMUM' preset potentiometer. To decrease maximum speed rotate the preset pot anti-clockwise and clockwise to increase speed (See 'controls' 6).
10. Setting the 'Automatic/Manual' switch to 'Automatic' causes the fan speed to be automatically controlled via the differential temperature between the high and low sensors. The 'Winter' switch is used in the winter months to draw warm air in the ceiling space down toward floor level. During the summer month the control is switched to 'summer' setting, the fan will then draw the cooler air at floor level up into the ceiling space.
- 11.

GUARANTEE

This product carries a two year guarantee when connected to suitable specified motors

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Models HCFDC for all applications using suitable specified 230Vac ceiling fans with forward and reverse windings.

WARNING

Mains voltage is present, care must be exercised when setting potentiometers. It is the responsibility of the user to ensure compliance with the Health and Safety at Work Act, 1974.

GENERAL

This unit utilise triac phase cutting techniques and should be used with motors which have been approved by the manufacture for speed control by this method.
Control is best achieved with propeller, axial or centrifugal fan loads where absorbed power at full load corresponds to at least 90% of the motor's capacity.

SPECIFICATION

Model No.	Maximum run current	Fuse Size
HCFDC	5 Amps	10 Amps

1. The HCFDC control is designed for a maximum continuous operation up to 5 Amps respectively at 30°C ambient on a 230Vac 50Hz single phase supply. Derate the controls maximum run current by 25% per 10°C for use above 30°C up to a maximum operating ambient of 50°C.
2. The normal equipment operating range is 0°C to 40°C ambient. The component temperature range is -20 to +60°C.
3. EMC, units are tested against the EN61800-3:1997 conducted emissions.
4. The HCFDC is supplied in a plastic box rated to IP44.

MOTOR PROTECTION

Fuses in the units are for the protection of the controller wiring and its components in case of short circuits. They do afford motor overload protection.

The installer should provide motor protection as recommended by IEE regulations

CONTROLS

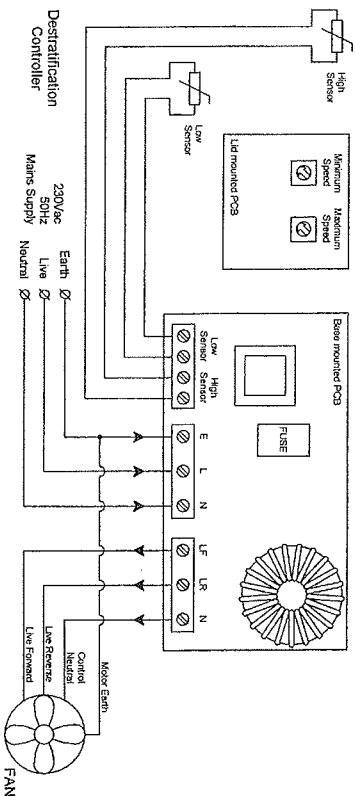
- On / Off switch**
 This isolates the motor from the Live line. Neutral remains present on the printed circuit board. It is recommended to use a mains isolator with this unit.
- Front Panel Rotary Knob**
 This enables the user to vary the fan speed from a preset minimum, to a maximum speed when the unit is switched to manual mode. In automatic mode the knob adjusts the sensitivity of the fan speed to the temperature difference between the high and low level.
- Summer / Winter switch**
 When switched to 'winter', the forward/reverse ceiling fan blows air from the ceiling space down towards floor level (fan is forward rotating). When switched to 'summer' the fan draws air from the floor up towards the ceiling space (fan is reverse rotating).
- Manual / Automatic**
 When the control is switched to 'automatic' the output to the fan is being controlled via the differential temperature between the high and low sensors. When the control is switched to 'manual' the output to the fan is being controlled via the front panel 'fan speed control' knob.
- Minimum Speed potentiometer**
 This internally mounted preset potentiometer provides minimum speed adjustment to as low as 10% of the maximum rated motor speed. It is factory set to 100 volts. (See 'Installation Instructions' 8).
- Maximum Speed potentiometer**
 This internally mounted preset potentiometer provides maximum speed adjustment, as is used to remove any dead band seen at maximum output. It is factory set to give maximum output voltage. (See 'Installation Instructions' 9).

WIRING THE CONTROL

Control terminals

TB1 left to right	1 & 2	Low Sensor	
	3 & 4	High Sensor	
TB2 left to right	1	Earth	from mains supply
	2	Live	from 230Vac 50Hz supply
	3	Neutral	from 230Vac 50Hz supply
TB3 left to right	1	LF	Live forward output
	2	LR	Live reverse output
	3	N	Control Neutral output

BOARD LAYOUT



WIRING THE MOTOR

