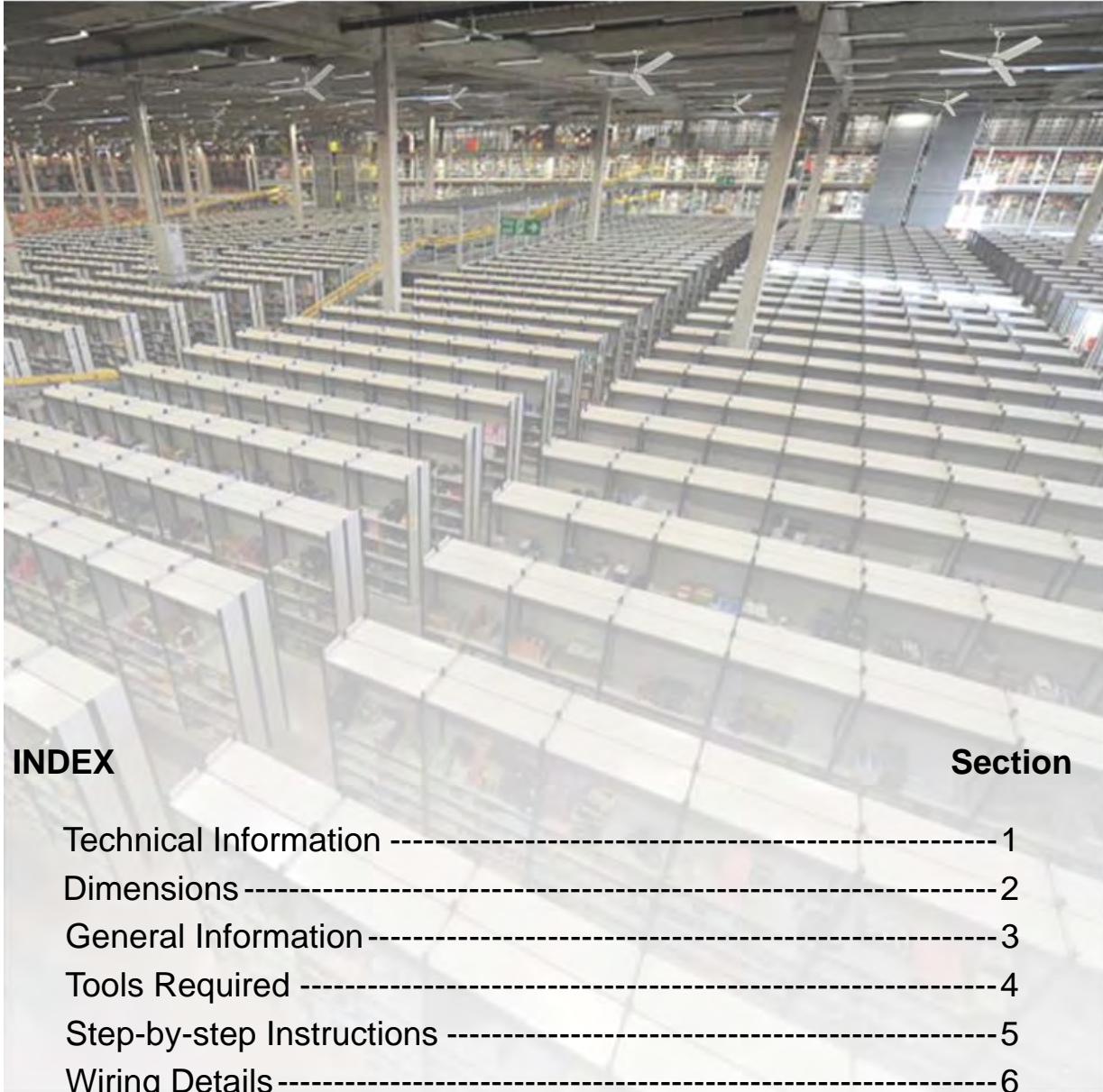


# BENSON IM RANGE

## IMPELLOR FAN AND CONTROLS

### INSTALLATION AND OPERATING MANUAL



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#### WARNINGS

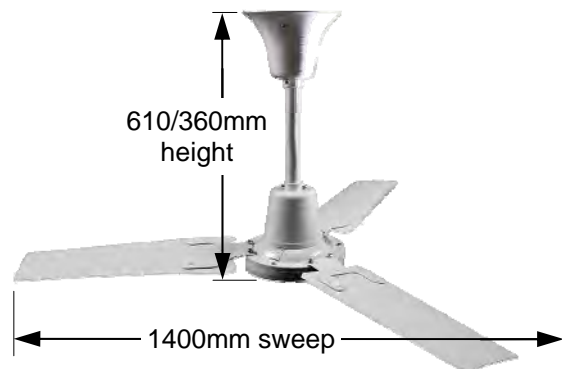
All installations should be in accordance with the relevant requirements of Building Regulations, Local Authority Byelaws and I.E.E. Regulations and Units should be wired by a competent, qualified Electrician.

## Technical details

		IM1400
Air Displacement	m <sup>3</sup> /h	Up to 12,000
Maximum mounting height	m	12
Minimum mounting height	m	2.5
Floor coverage @ max height	m <sup>2</sup>	130
Maximum fan centres	m	12
Clearance to walls	m	2.5
Electrical supply	V/ph/Hz	230/1/50
Fuse rating	A	3
Motor rating	W	67
Height	mm	940
Blade sweep	mm	1400
Net weight	kg	5.0

## Dimensions.

All sizes are supplied with 2 downrod lengths:  
400mm downrod fitted giving 610mm overall drop. (from ceiling to base of motor body)  
150mm downrod supplied loose giving 360mm overall drop (from ceiling to base of motor body)



## Important information.

### 1.0 IMPORTANT

1.1 The fan must be sited and connected in accordance with current IEE regulations or the appropriate standards.

1.2 This appliance must be earthed.

1.3 The appliance is not intended for use by young children or infirm persons without supervision.

1.4 Young children should be supervised to ensure that they do not play with the appliance.

1.5 Check that the voltage and frequency on both the fan motor and controller (if fitted) rating labels correspond with your electrical supply.

1.6 The installation must be provided with a double pole isolator switch having a contact separation of not less than 3mm and protected with a 5 Amp fuse.

1.7 Ensure that the safety wire is connected to the J-hook bracket before operating the Fan.

## Tools required.

The following tools and equipment will be required to complete this task:

1. Electric Drill.
2. Drill bits.

3. Wire Strippers/cutters.
4. Various Screwdrivers.
5. Electrical screwdriver.
6. Multi-meter.

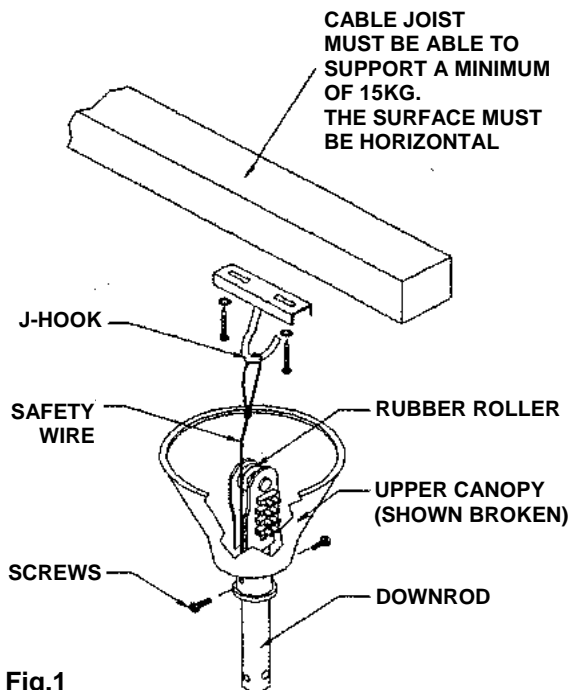
## Step by step instructions.

### 2.0 INSTALLING THE CEILING FAN

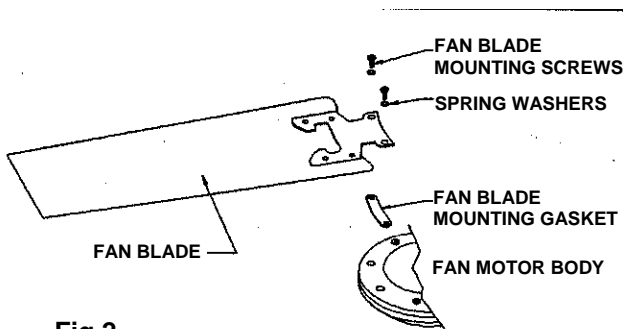
(Ensure that the mains supply is isolated before proceeding with the wiring.)

2.1 Decide on the position of the fan to be sited. It must be a minimum of 2.3m from the floor to the lowest point on the fan. (A shorter 150mm long downrod is supplied with the fan if required. Refer to the selection on installing the shorter downrod).

2.2 Fix the ceiling J-hook (supplied) firmly to a timber joint or concrete ceiling with the screws supplied (or similar). **Ensure that the fixing bracket in the ceiling is able to support a hanging weight of 15kg minimum.** (Fig 1)



2.3 Fit the three blades to the fan body (see Fig 2).



2.4 Hang the fan on the hook with the safety wire, then hook up the fan on the black rubber roller making sure that all wires are clear.

2.5 Connect supply wires to the fan using the terminal block at the top of the downrod. (See wiring diagrams Figs. 3 and 4)

2.6 Secure upper canopy with screws fitted to cover the wiring connections.

2.7 Tighten all screws including the earth connections.

2.8 Switch on supply and check fan function.

### 3.0 INSTRUCTIONS FOR CHANGING TO SHORTER 150mm DOWNROD

Ensure that the mains supply is isolated before proceeding

3.1 loosen the lower canopy screws and slide the canopy up the downrod.

3.2 Disconnect the Brown (LF), Red (LR) and Blue (N) wires which run up the downrod from the lower terminal block located just above fan motor body.

3.3 Disconnect the Earth (Green/Yellow) wire from the lower mounting bracket which also runs up the downrod.

3.4 Carefully remove the split pin and the downrod securing bolt.

3.5 Loosen the upper canopy screws and slide canopy down the downrod.

3.6 Carefully remove the split pin and down rod securing bolt and then the Earthwire.

3.7 Carefully remove the existing downrod passing the disconnected feed wires through the rod along with the safety wire.

3.8 Replace with the 150mm long downrod.

3.9 Pass the feed wires through the new Rod along with the safety wire.

3.10 Replace the upper and lower downrod securing bolts and split pins.

3.11 The feed wires will need to be cut and stripped to suit the shorter rod and re-connect as follows to the lower terminal block Brown (LF) Red (LR) and Blue (N).

3.12 Re-connect all Earth (Green/Yellow) wires.

3.13 Because the shorter downrod has been required for your particular installation, it is recommended that the safety wire is reduced in length to protrude 75mm above the height of the 150mm downrod. The loop for the safety wire will need re-making by using a wire rope grip or crimp (Supplied by others). It is essential that the new safety wire loop will withstand the weight of the fan in the event of it falling.

**IMPORTANT ALL FIXINGS MUST BE TIGHT BEFORE OPERATING THE FAN. IT IS ADVISABLE TO CHECK/INSPECT ALL THE FIXINGS ANNUALLY, AND RE-TIGHTEN AS NECESSARY.**

# Optional Fan Controller.

## 4.1 TECHNICAL

		HCFC
Electrical Supply	V/Ph/Hz	230/1/50
Max. Peak Current	A	1.7
H x W x D	mm	108 x 108 x 60
IP Rating	IP	51



## 4.2 DESCRIPTION

Reversible electronic speed controller suitable for use with up to five ceiling fans.

## 4.3 INSTALLATION

All electrical installation must be carried out by suitably qualified and competent personnel in accordance with all current statutory requirements.

Check the details on the motor rating plate to ensure that the correct power supply (voltage, frequency and phase) is available. An incorrect power supply will lead to permanent damage of the unit.

Check that the number, size and speed of the fan(s) can safely be controlled by the controller supplied.

Connections are provided for one (1) fan outlet. If more than one fan is to be controlled then a correctly wired external junction box should be used.

The controller is only suitable for surface mounting and must not be recess mounted.

Install in a dry sheltered position. Do not install in close proximity to a heat source or in areas of high humidity. The maximum ambient temperature for the controller must not exceed 40° C (104° F).

**WARNING! The controller must be isolated from the power supply during installation and maintenance.**

Remove the front cover of the controller by unscrewing the cover fixing screws. This provides access to mounting holes and electrical terminals.

The controller must be connected to a suitably rated fused spur.

## 4.4 WIRING

Select the correct wiring diagram for the fan and controller supplied. All wiring and control equipment MUST comply with the latest IEE regulations, in particular 552-01-02/03.

See wiring diagram Fig.5 for further details.

In the event that the wiring connections for the fan supplied do not correspond to diagrams shown, please refer to the fan instructions or contact for further assistance.

## 4.5 OPERATION

Switch on the controller by operating the FORWARD/OFF/REVERSE rocker switch. Rotating the Control Knob clockwise will increase the speed of the fan(s) from a pre-set minimum (see below) to full speed (with infinitely variable speeds in between). The fan blades must be stationary before changing direction of rotation on the controller.

**WARNING! Only a suitably qualified and competent person may carry out adjustment of the preset min speed control setting after the electrical supply has been isolated.**

## 4.6 MINIMUM SPEED CONTROL SETTING

On certain fan types the factory set minimum speed might require adjustment. To adjust the minimum speed rotate the control knob on the front fully anti-clockwise. This is the current minimum speed position. Turn the minimum speed potentiometer inside the unit anti-clockwise to increase the minimum speed setting and turn clockwise to decrease the minimum speed setting. The fan will not fall below this pre-set speed during operation regardless of the front panel Control Knob setting. The minimum setting should not be less than 120V to ensure that the motor starts.

# Optional Automatic Controller.

## 5.1 TECHNICAL

		ADC-4
Electrical Supply	V/Ph/Hz	230/1/50
Max. rating	A	4
H x W x D	mm	147x 197 x 79
IP Rating	IP	51



## 5.2 DESCRIPTION

The ADC4 is a fan speed controller for summer/cooling or winter de-stratification applications.

The controller features an Automatic/Manual selector switch as well as a forward/reverse switch for fan direction.

In Automatic mode the controller utilises 2 sensors (high & low level) to move any warm air that is rising to the ceiling back down to floor level.

## 5.3 INSTALLATION

A suitable qualified and competent person in accordance with current applicable regulations should carry out installation.

## 5.4 AIR TEMPERATURE SENSORS

The air temperature sensors should be mounted such that they do not come into contact with heat sources such as direct sunlight, heating/cooling pipe work. They will then measure actual air temperature.

**Low level sensors:** To be mounted 0.5 meters above the floor

**High level:** To be mounted as high above fans as possible.

The sensors are supplied in black enclosures with access to terminals via lid. Cable entry is via cable gland provided.

## 5.5 SENSOR CABLING

Use 2 core cable, which should be run to avoid conduit and layouts where severe pickup can result. The sensors current consumption is approx. 1mA at 12 volts dc.

## 5.6 COMMISSIONING UNTIS:

### 5.6.1 Manual setting:

1. Set front switches to DOWN and MANUAL
2. Set front manual knob to full speed (fully clockwise)
3. Adjust internal max speed trimmer to give required max speed
4. Set front manual knob to minimum speed (fully anticlockwise)
5. Adjust internal min speed trimmer to give required min speed

### 5.6.2 Automatic setting:

1. Set front switches to DOWN and AUTO and the automatic knob to '0'

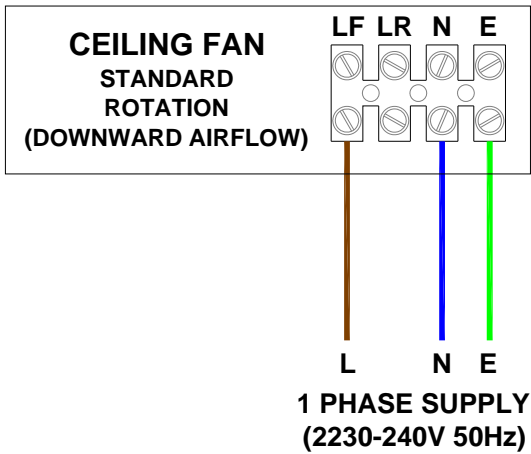
The controller will now function in the automatic mode. Min and Max speeds in auto mode are as set up in manual mode.

See wiring diagram Fig.6 for further details.

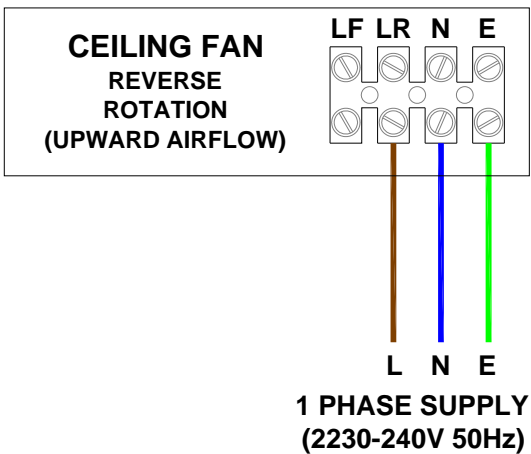


# Wiring details.

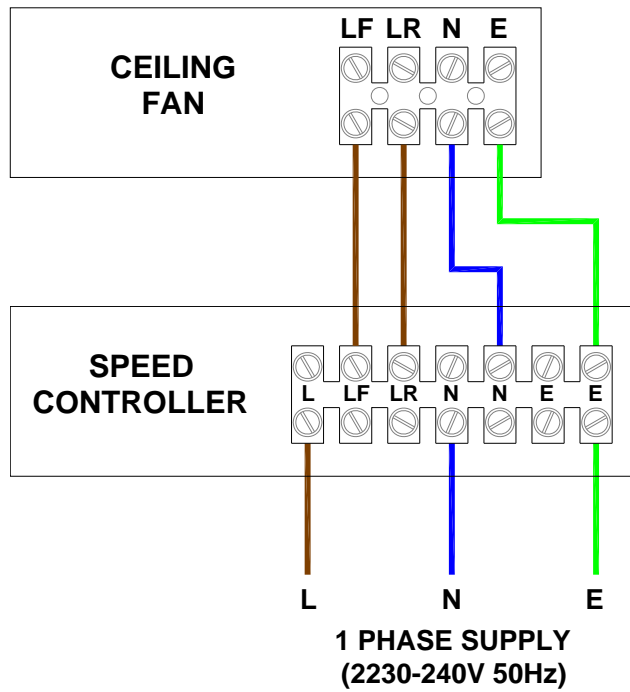
**Fig.3 - Terminal connections - Standard rotation**



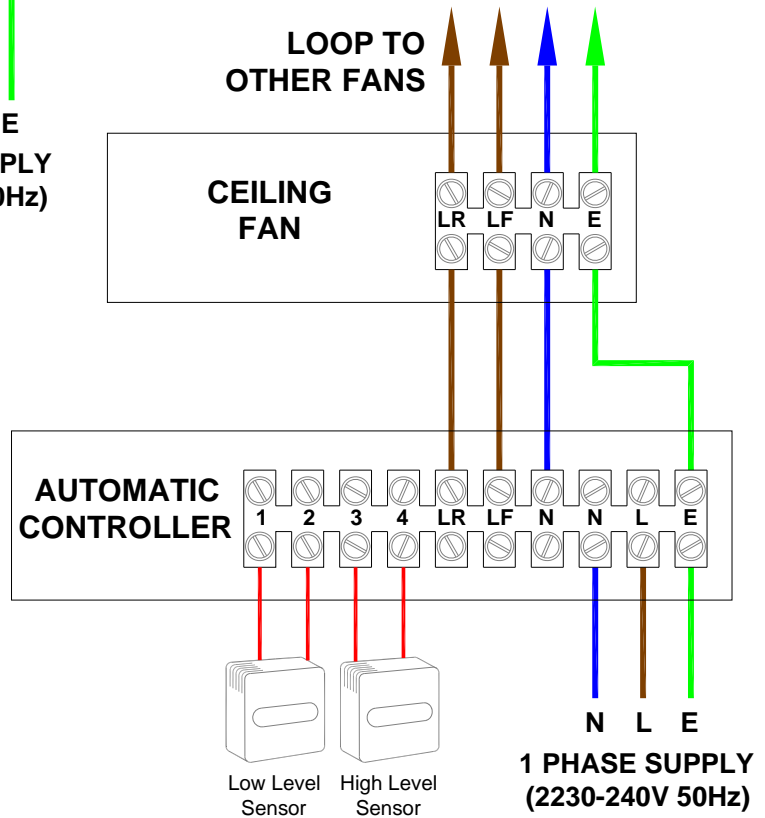
**Fig.4 - Terminal connections - reverse rotation**



**Fig.5 - Terminal connections - Speed Controller**



**Fig.6 - Terminal connections - Automatic Controller**



## Notes



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