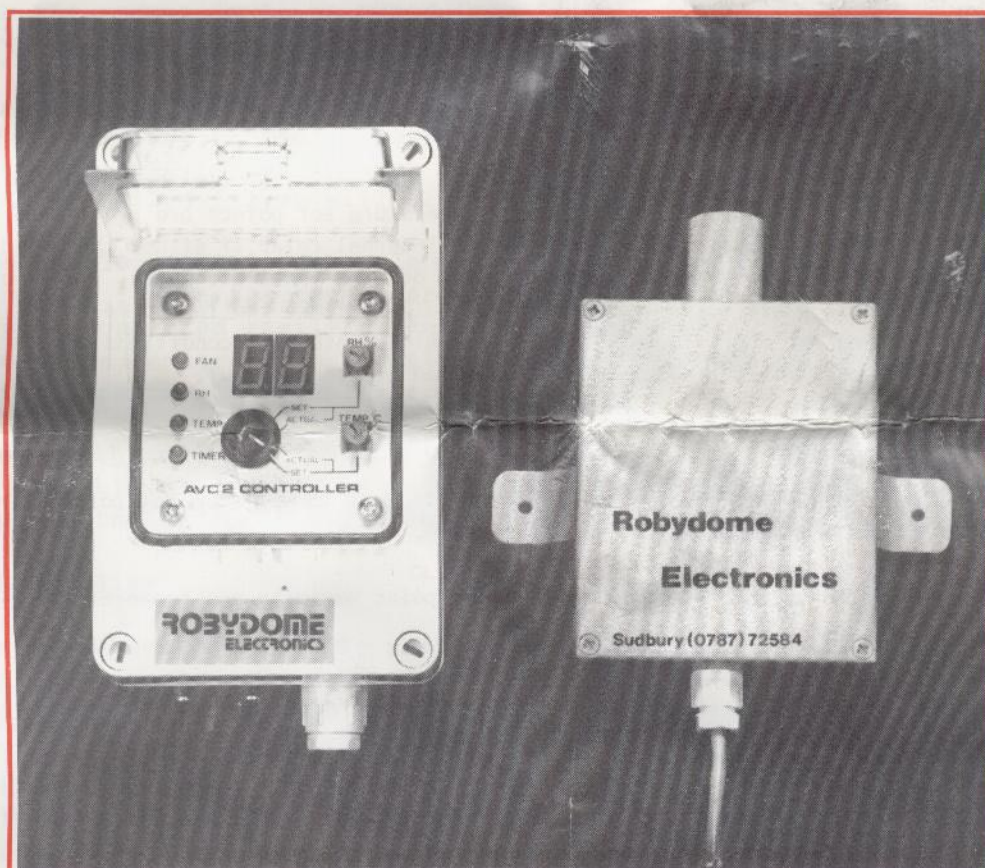


# ROBYDOME ELECTRONICS

## AVC2

### AUTOMATIC VENTILATION CONTROLLER



- New fan controller using proven electronics
- Humidity and temperature controller complete with combined humidity and temperature sensor on 10m cable
- Ensures efficient drying and ventilation of stored crops
- Easy to set up and use
- Built in anti-hunting timer



## AVC2

### Installation for controlling a drying fan

#### The sensor

Site this in a position shielded from the direct effect of the weather but where it will be able to sense a representative sample of the air used for ventilation. Under an eave of a building is ideal and within 3m of the fan inlet. Be sure that exhaust air from louvres in the store does not influence the sensor sampling air; this will cause a reading error. The fixing bracket may be removed by unscrewing the two self-tap screws for applications where the sensor is to be moved from time to time. IMPORTANT: replace the screws to reseal the sensor housing.

The sensing elements (RH and Temperature) are located under the filter; this may require periodic cleaning. To remove, grip firmly and with a slight twist, pull off. Wash in warm soapy water, dry completely and replace. A heavily soiled filter will slow the sensors' response to changes in humidity.

Route the 10m cable, (extensions are available up to 50m), to the AVC controller. Note the connector on the sensor; this will enable the sensor to be disconnected easily by untwisting the locking ring. DO NOT pull the cable. The sensor can be recalibrated by returning it to Robydome Electronics service department - usually every 2/3 years.

To get the benefit of the small drop in humidity as air passes through the fan, a  $\frac{1}{2}$ " bleed tube can be installed from the fan duct (downstream) and routed to the sensor. Allow the air from the tube to bathe the filter.

#### The controller

It is recommended that this unit is installed by a qualified electrician. To fix to a wall, remove the front panel secured by four fixing screws. BE CAREFUL: a wiring loom is attached to the assembly. Hold the front panel in one hand, use the thumb and forefinger of the other to grip the sides of the small connectors on the board. Move gently from side to side and pull to remove. The plastic case can now be fitted using the four fixing holes (one in each corner).

The unit requires a 240v AC supply to power the electronics. Route all cabling through the glands. It must be earthed and fused at 3/5A maximum. The mains and relay connections are made onto the block connector mounted on the pcb - see Diagram 1.

Re-assemble controller and plug the sensor into the socket. The controls are accessed by lifting the clear plastic flap - keep this closed during normal operation. Test the unit by isolating the main supply to the fan. Note the ACTUAL humidity and temperature reading (switch in ACTUAL positions). Switch alternately to SET positions and rotate the controls to the right of the selector switch such that the readings will swing either side of the ACTUAL values. As this occurs, the appropriate red lamp (RH and temp) will indicate when the SET and ACTUAL values coincide. The lamps show when the ACTUAL value has exceeded the SET value. BOTH lamps have to be OUT before



## AVC2

### Operating the controller

READ LEAFLET AVC2 FIRST.

Familiarise yourself with the mode of operation using the set up notes. Particularly refer to the Summary of Operation (Table 2). These notes will assume the AVC2 is used for drying and cooling, by controlling a fan.

Using the selector switch, set in the highest values of RH and temperature desired. If either are not required for control for a period, then set to the highest value beyond the normal working range.

The AVC2 can be used to control with respect to RH and temperature, or RH OR temperature.

AVC2 requires no regular maintenance but it is recommended it is left ON at all times, since the small amount of heat will help to keep the unit free from moisture. Isolate the fan by its external switch gear during periods of non-operation.

Table 1

AIR RELATIVE HUMIDITY AND MOISTURE CONTENT EQUILIBRIUM VALUES AT 15.6°C (60°F)

	50	60	70	75	80	90	%RH
Barley	11.5	13.2	15.0	16.0	17.2	22.5	
Wheat	12.0	13.7	15.5	16.6	17.5	22.5	
Oilseed Rape	6.2	6.9	8.1	9.3	10.6	14.8	
Grasses	10.5	12.0	13.7	15.1	17.2	24.3	



the FAN and TIMER lamps come on. The relay will operate at the same time. The TIMER lamp shows the timer is operating and will continue for approximately 15 minutes. Whilst the timer is in, the fan will continue, even if the conditions become unfavourable.

Adjust the set points to the desired values (see table 1) and leave the ACTUAL/SET selector switch in one of the ACTUAL positions. The actual Relative Humidity or temperature is now indicated.

Summary of Operation (Table 2)

RH	LAMPS		TIMER	RELAY STATUS	CONDITION
	TEMP	FAN			
ON	ON	OFF	OFF	OFF	RH & Temp over SET POINT
OFF	ON	OFF	OFF	OFF	RH OK, Temp over SET POINT
ON	OFF	OFF	OFF	OFF	Temp OK, RH over SET POINT
OFF	OFF	ON	ON	ON	RH & Temp OK
OFF	OFF	ON	OFF	ON	RH & Temp OK
ON	ON	ON	ON	ON	RH & Temp over SET POINT, TIMER ON

NB: Not all combinations are shown.



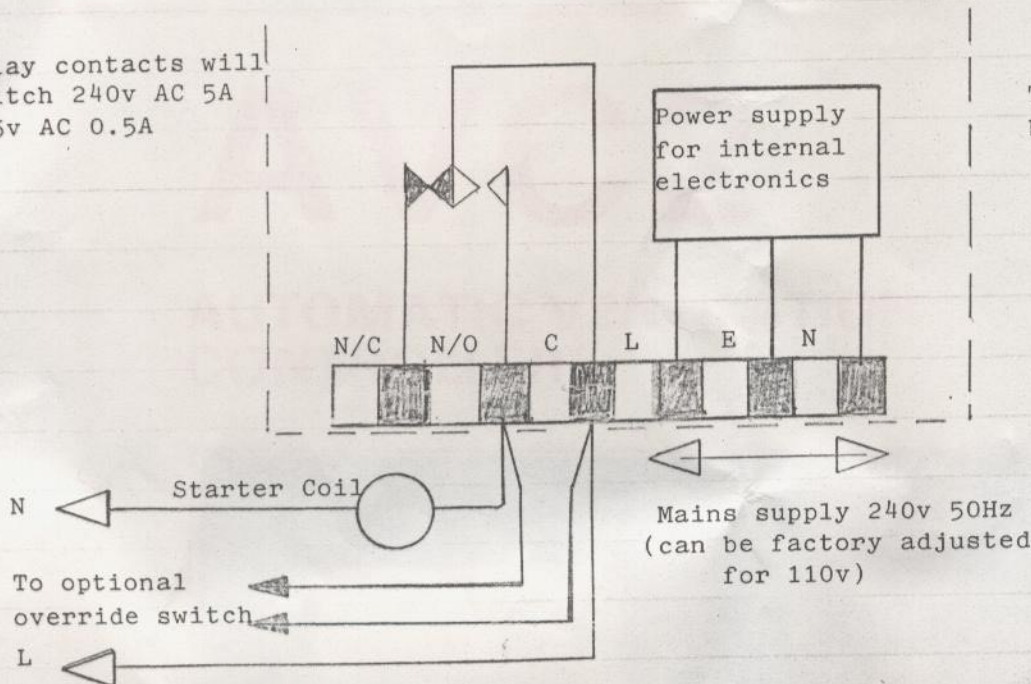
(Diagram 1)

## AVC2

### DIAGRAM SHOWING CONNECTION DETAILS

(Typical configuration for controlling a drying fan)

Relay contacts will  
switch 240v AC 5A  
415v AC 0.5A

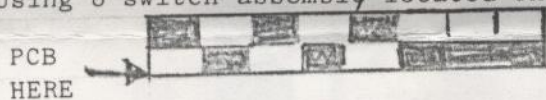


### IMPORTANT

This instrument must  
be earthed.

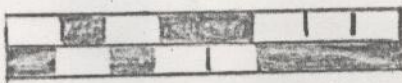
AVC2 operating characteristics can be altered.

Using 8 switch assembly located on rear of main pcb.



OFF  
ON

Normal operation a TABLE 2



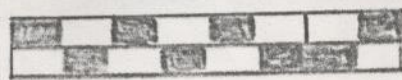
Temperature operation reversed  
change 1 to 4



Fan operation reversed  
change 5 and 6



RH control OFF - monitor only  
change 7



Temperature control OFF - monitor only  
change 8

1 2 3 4 5 6 7 8

NB: Switch assembly viewed from side

An optional Y junction.

An optional Y junction for AVC2 sensor lead is required where a separate temperature sensor is to be used INSTEAD of the temperature sensor element in the standard sensor housing. This assembly plugs into the AVC2 console socket allowing either a lance or standard Robydome temperature sensor to be plugged in. This option is useful where the controller is to be used for crop temperature sensing AND/OR control.