

TINY DEW SENSOR

Dew (condensed moisture) adversely affects the normal performance of sensitive electronic devices. A low-cost circuit described here can be used to switch off any gadget automatically in case of excessive humidity.

At the heart of the circuit is an inexpensive (resistor type) dew sensor element. Although dew sensor elements are widely used in video cassette players and recorders, these may not be easily available in local market. However, the

same can be procured from authorised service centres of reputed companies. The author used the dew sensor for FUNAI VCP model No. V.I.P. 3000A (Part No: 6808-08-04, reference no. 336) in his prototype. In practice, it is observed that all dew sensors available for video application possess the same electrical characteristics irrespective of their physical shape/size, and hence are interchangeable and can be used in this project.

The circuit is basically a switching type circuit made with the help of a

popular dual op-amp IC LM358N which is configured here as a comparator. (Note that only one half of the IC is used here.) Under normal conditions, resistance of the dew sensor is low (1 kilo-ohm or so) and thus the voltage at its non-inverting terminal (pin 3) is low compared to that at its inverting input (pin 2) terminal. The corresponding output of the comparator (at pin 1) is accordingly low and thus nothing happens in the circuit.

When humidity exceeds 80 per cent, the sensor resistance increases rapidly. As a result, the non-inverting pin becomes more positive than the inverting pin. This pushes up the output of IC1 to a high level. As a consequence, the LED inside the opto-coupler is energised. At the same time LED1 provides a visual indication. The opto-coupler can be suitably interfaced to any electronic device for switching purpose.

Circuit comprising diode D1, resistors R8 and R6 and capacitor C1 forms a low-voltage, low-current power supply unit. This simple arrangement obviates the requirement for a bulky and expensive step-down transformer.

