



Capacitive Humidity Sensors



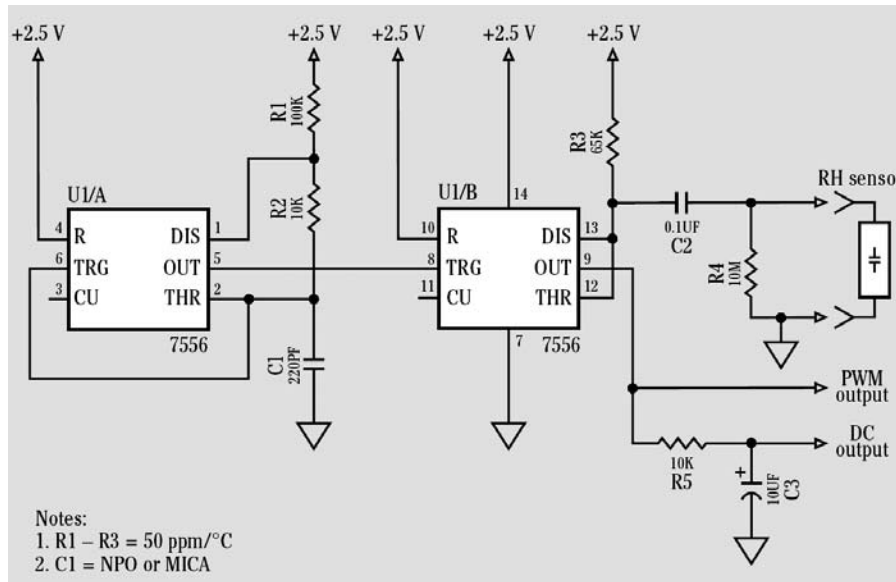
INNOVATIVE SENSOR TECHNOLOGY





Capacitive Humidity Sensors

Typical Application Circuits



Oscillator Section

Monoflop with variable delay time
→ PWM output

Advantages:

- Simple
- Inexpensive
- Digital and analog

Disadvantages:

- No temperature compensation
- Frequency spectrum may exceed sensor specification
- Oscillator circuit may drift in frequency
- Accuracy around 5...10%

Disadvantages can be significantly reduced by additional micro-controller and 2 point calibration.



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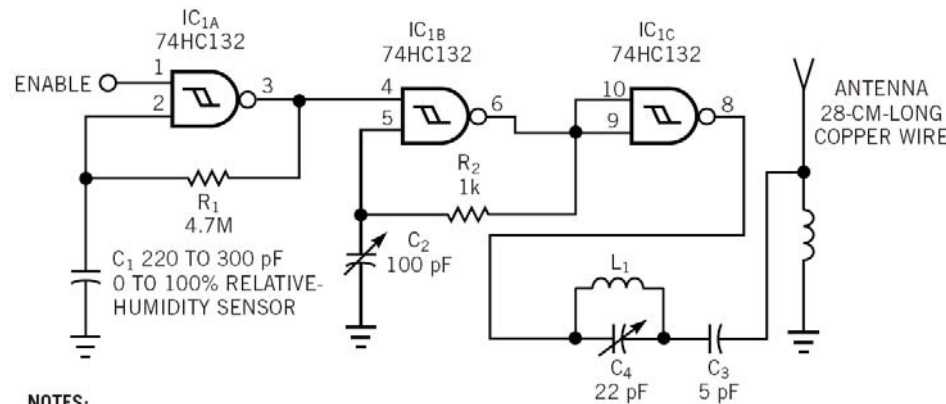


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Capacitive Humidity Sensors

It works even cheaper



NOTES:
 L₁ IS SIX TURNS OF 22-GAUGE WIRE WITH 5-MM DIAMETER.
 L₂ IS 18 TURNS OF 22-GAUGE WIRE WITH 5-MM INNER DIAMETER.

Advantages:

- Simple
- Inexpensive
- Wireless

Disadvantages:

- High temperature drift
- Accuracy around 10...20%

Oscillator Section	Monoflop with variable delay time → PWM output	Short range wireless transmitter
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There is no way to thermally compensate.
 The sensor will see a high frequency spectrum and act very nonlinear



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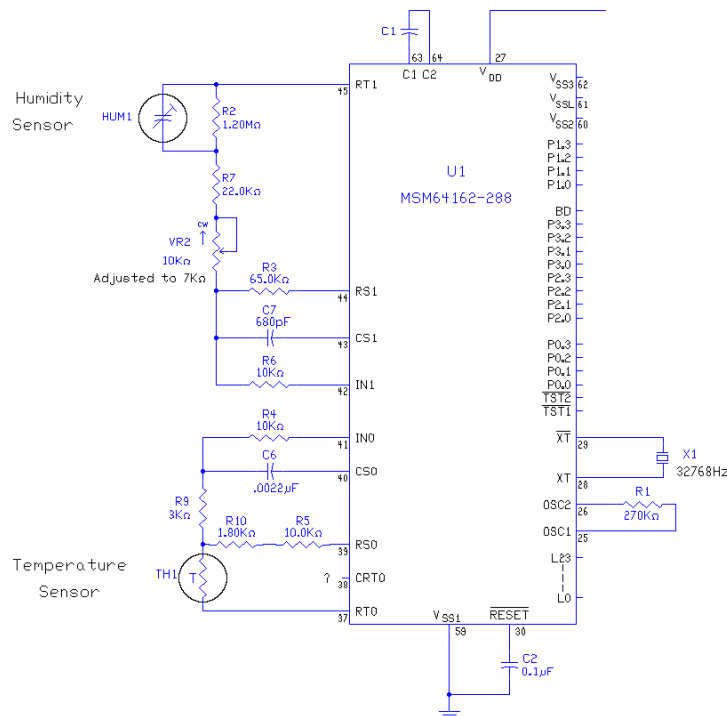


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Digital evaluation circuit



Advantages:

- Simple
- Inexpensive
- Digital and analog
- Display logic integrated
- Thermally compensated
- Sensor operated within spec
- Accuracy 0.5 ... 1% possible

Disadvantages:

- Micro controller needs to be programmed (NRE effort)
- Multipoint calibration over humidity and temperature needed



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