

Application circuit for Humidity sensor SMTHS10 DC output

The below given circuit is a typical astable multivibrator application based on the very popular TLC 555 (CMOS type). The SMTHS10 is used as variable capacitor. Of course other measurement circuits can be used.

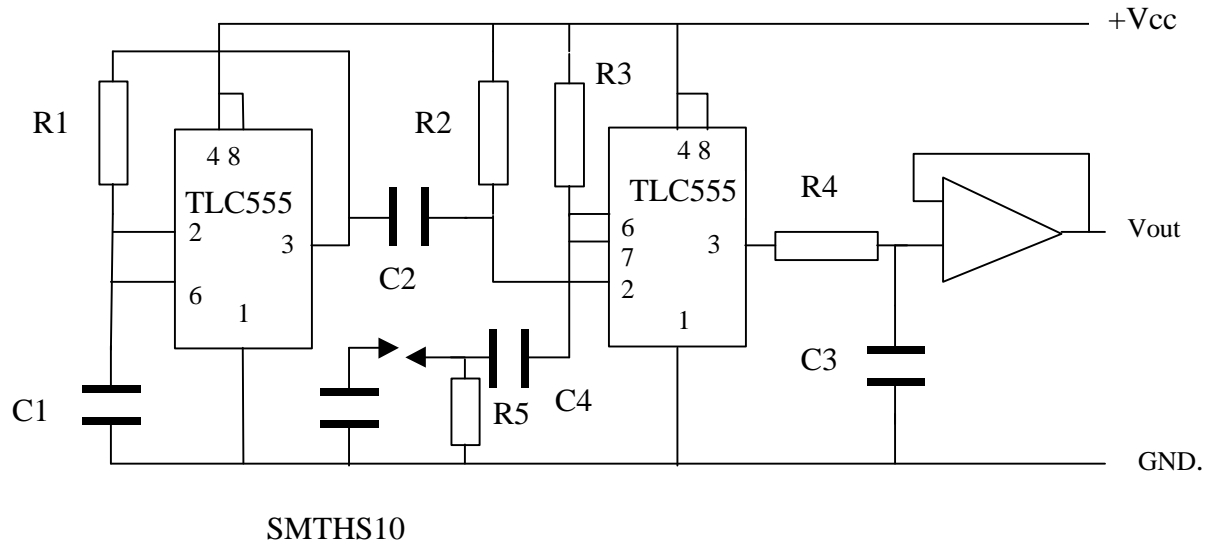


Fig 1. Typical measurement design based on 2xTLC555 with DC output.

Components list:

| | | | | | |
|----|---|----------------|----|---|-------------|
| R1 | = | 27 K Ω | C1 | = | 0.1 μ F |
| R2 | = | 1 K Ω | C2 | = | 1 nF |
| R3 | = | 150 K Ω | C3 | = | 1 μ F |
| R4 | = | 100 K Ω | C4 | = | 0.1 μ F |
| R5 | = | 10 M Ω | | | |

R3 and C1 are used to prevent a DC voltage over the humidity sensor.

Vout varies between around 0.5 Vcc and Gnd. and is influenced by R1 and C1

Circuitry runs around 25 Kc (left 555). The monostable based on the HS10 and load resistance of 150 K Ω has a pulse output time of about 25 μ s. Other values are of course also possible. The output of the monostable is low passed filtered by R4 and C3 (time constant 100 ms). And buffered by a simple opamp.