FACTSHEET
Circuit for Humidity sensor SMTHS07 with DC output

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Application circuit for Humidity sensor SMTHS07
DC output

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The below given circuit is a typical astable multivibrator application based on the very popular TLC 555 (CMOS type). The SMTHS07 is used as variable capacitor. Of course other measurement circuits can be used.
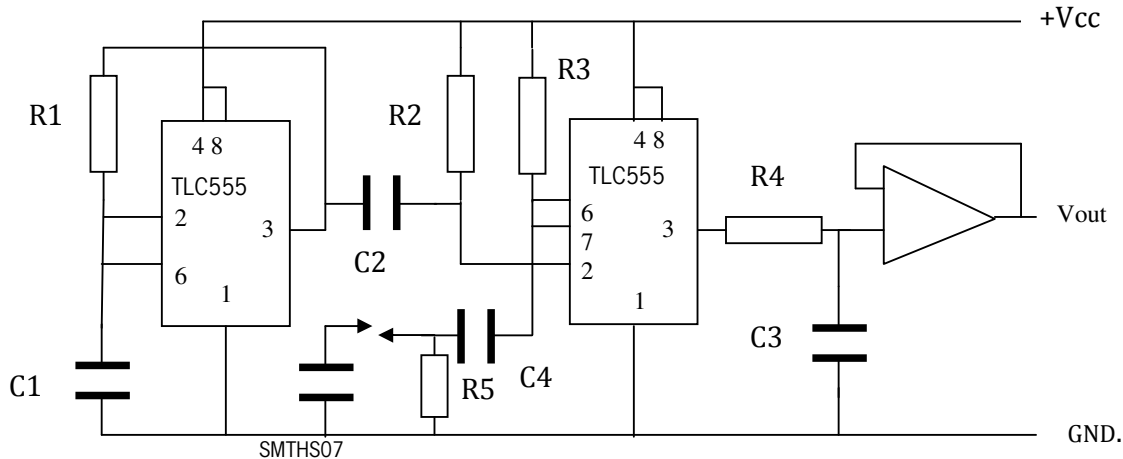

Fig 1. Typical measurement design based on 2xTLC555 with DC output.

Components list:

R1	=	27 KΩ	C1	=	1	nF
R2	=	1 KΩ	C2	=	1	nF
R3	=	150 KΩ	C3	=	1	µF
R4	=	100 KΩ	C4	=	0.1	µF
R5	=	10 MΩ				

R3 and C4 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 HS07 and load resistance of 150 KΩ has a pulse output time of about 25 µs. 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.

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