HC201

Humidity Sensors for HVAC Applications

Typical Applications

HVAC
hand helds
humidifiers
dehumidifiers

Features

high repeatability
high sensitivity
wettable
very good long term stability
good resistance to pollutants
small size construction

Technical Data

Nominal capacitance C_{76} (at 20°C / 68°F)	200 ± 30 pF	
Sensitivity	0.6 pF / % RH	
Working range	Humidity	10...95% RH
	Temperature	-40...110°C (-40...230°F)
Linearity error (20...90% RH)	< ± 2% RH	
Hysteresis	2.0 ± 0.3% RH	
Response time t_{90}	< 15 sec	
Temperature dependence [%RH /°C]	ΔRH = g * RH * (T - 20)	g = -0.004 ± 10 %
Long term stability at 20-30°C (68-86°F) / 20-80% RH	drift < 1.5 % / year	
Loss tangent	< 0.1 typical	
Maximum supply voltage (no DC voltage)	5 V max (Upp)	
Maximum DC voltage	< 5 mV	
Operating frequency	10...100 kHz, recommended 20 kHz	
Material connection	phosphor bronze with tin coating	

Packaging

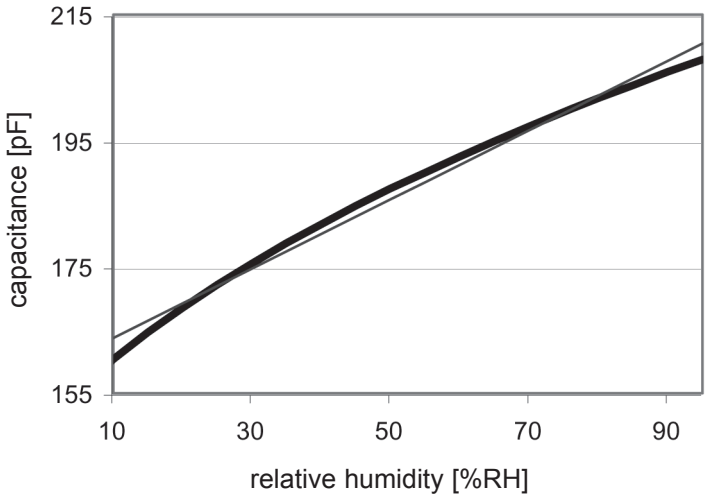
HC201	taped
HC201/H	in tube (80 pcs packing unit)
HC201/G	taped

Characteristics

The average increase of capacitance over the working range is 50pF. For the range of 20–90% RH, linear approximation is possible, errors will be lower than ± 2% RH.

The sensor characteristic is described by the following linear formula:

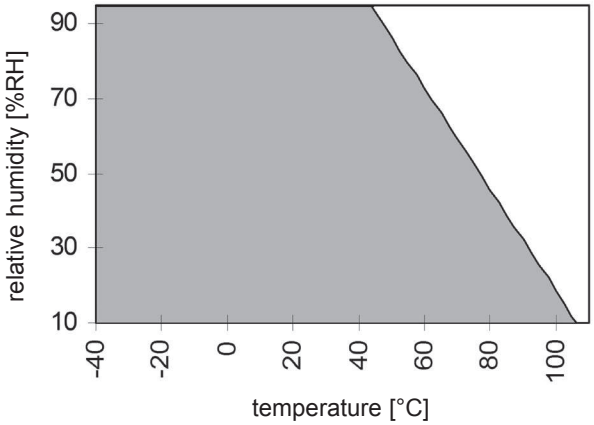
$C(RH) = C_{76} * [1 + HK * (RH – 76)]$
with HK = 2700 ± 250 ppm /% RH



Working Range

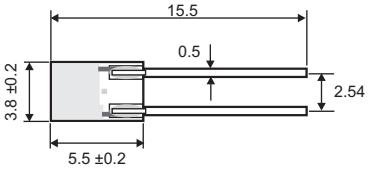
The working range for the humidity sensor HC201 is shown with regard to the humidity / temperature limits.

Although the sensors would not fail beyond the limits, the specification is guaranteed only within the working range.
In applications with high humidity at high temperature the time factor shall be considered.

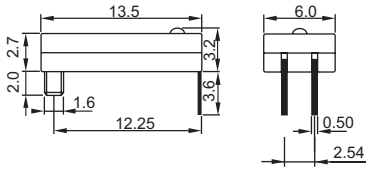


Dimensions (mm)

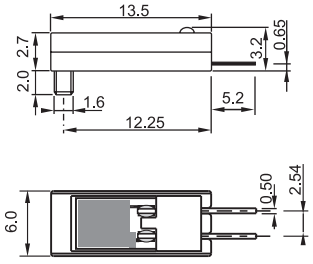
1 mm = 0.03937” / 1” = 25.4 mm



HC201



HC201/H



HC201/G

Ordering Guide

MODE	TYPE	
HC	capacitive humidity sensor 200 pF	(201)
	capacitive humidity sensor 200 pF with PC housing for mounting on the printed ciruit board	(201/H)
	capacitive humidity sensor 200 pF with PC housing	(201/G)
HC		