

Preliminary Data Sheet

RELATIVE HUMIDITY SUB-SYSTEM

HF 3223 / HTF3223

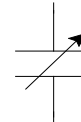
Based on the rugged HS1101 humidity sensor, HF3223 / HTF3223 is a dedicated humidity transducer designed for OEM applications where a reliable and accurate measurement is needed. It features a miniature connector for easy, cost-effective mechanical mounting. Direct interface with a micro-controller is made possible with the module's linear frequency output for RH measurements.

Main features

- Size and connector type match existing humidity modules.
- Stable, linear proportional frequency output from 10 to 95% RH.
- Calibrated within +/- 5% RH @ 55% RH.
- Optional 10K +/- 3% NTC temperature sensor (HTF3223)
- Stable characteristics with temperature.
- High reliability and long term stability.

Humidity sensor specific features

- Instantaneous de-saturation after long periods in saturation phase.
- Fast response time.
- High resistance to chemicals.
- Not affected by water immersion.
- Patented solid polymer structure.



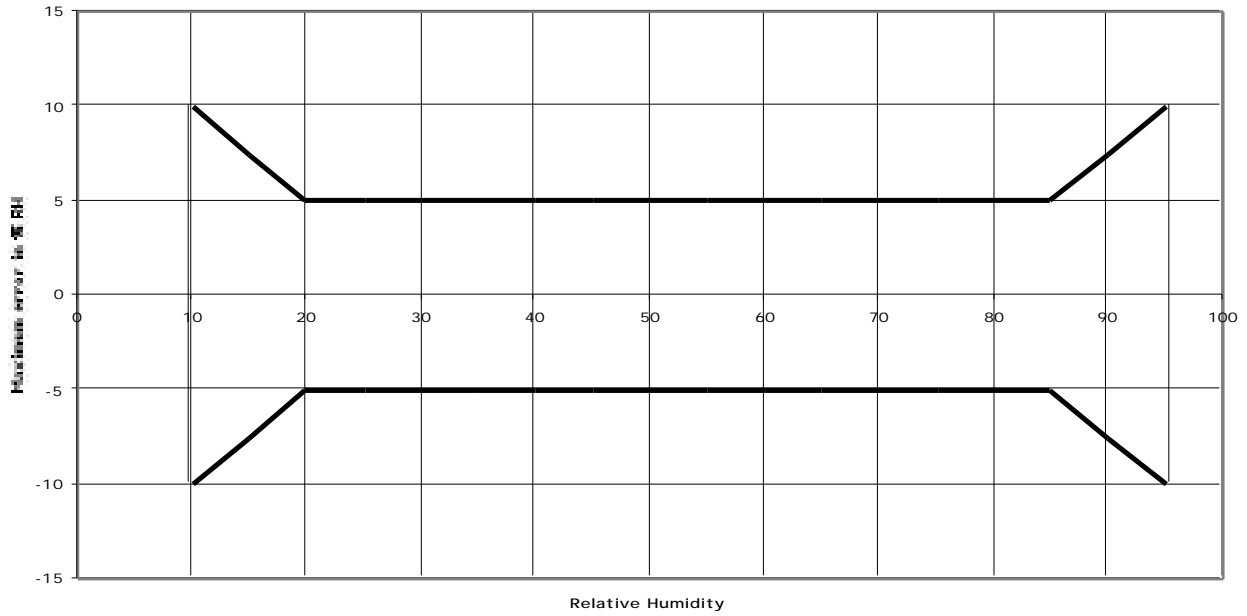
Maximum ratings (Ta = 25°C unless otherwise noted)

Ratings	Symbol	Value	Unit
Storage Temperature	T_{stg}	-40 to 85	°C
Storage Humidity Range	RH_{stg}	0 to 100	% RH
Supply Voltage (Peak)	V_s	7	Vdc
Humidity Operating Range	RH	0 to 99	% RH
Temperature Operating Range	T_a	-30 to 80	°C

Characteristics (Ta = 25°C, Vs = 5.0 VDC +/- 5%, RL > 100 k unless otherwise stated)

Characteristics	Symbol	Min	Typ	Max	Unit
Humidity metrologic range	RH	10		95	%RH
Relative Humidity accuracy (10 to 90% RH)	RH		+/- 5	+/- 10	%RH
Voltage supply	V_s	4.75	5.0	5.25	VDC
Nominal output @ RH = 55 %	F_{out}	8670	8750	8830	Hz
Current consumption	I_c			0.1	mA
Temperature coefficient (0 to 60 °C)	T_{cc}		+/-0.1		%RH/°C
Averaged Sensitivity from 33% to 75 % RH	F_{out}/RH	-16	- 18	-19	Hz/%RH
Sink current capability	I_s		100		μA
Recovery time after 150 hours of condensation	t		10		s
Humidity Hysteresis			+/-1.5		% RH
Long term stability			0.5		%RH/yr
Response time (33 to 76% RH, static, @63%)			10		s

Relative Humidity Accuracy of HF3223



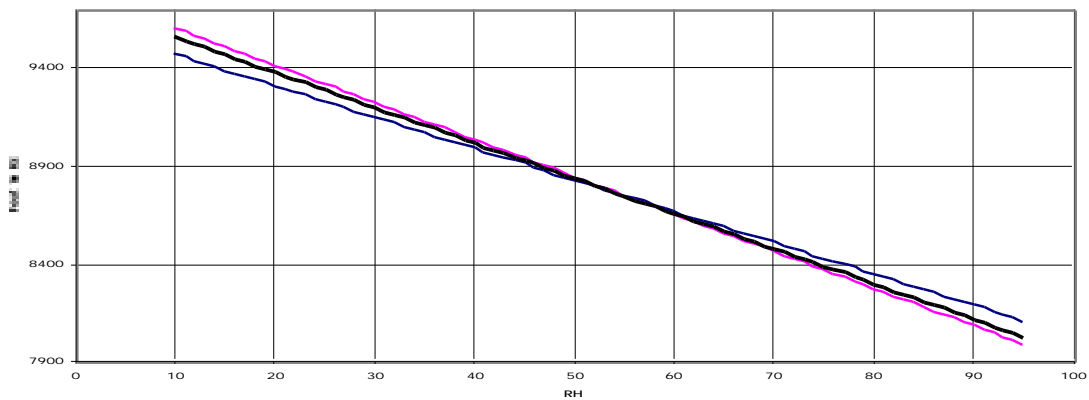
Modeled Signal Output (reference curve): $F_{out} = 9740 - 18 * RH$ with F_{out} in Hz and RH in %

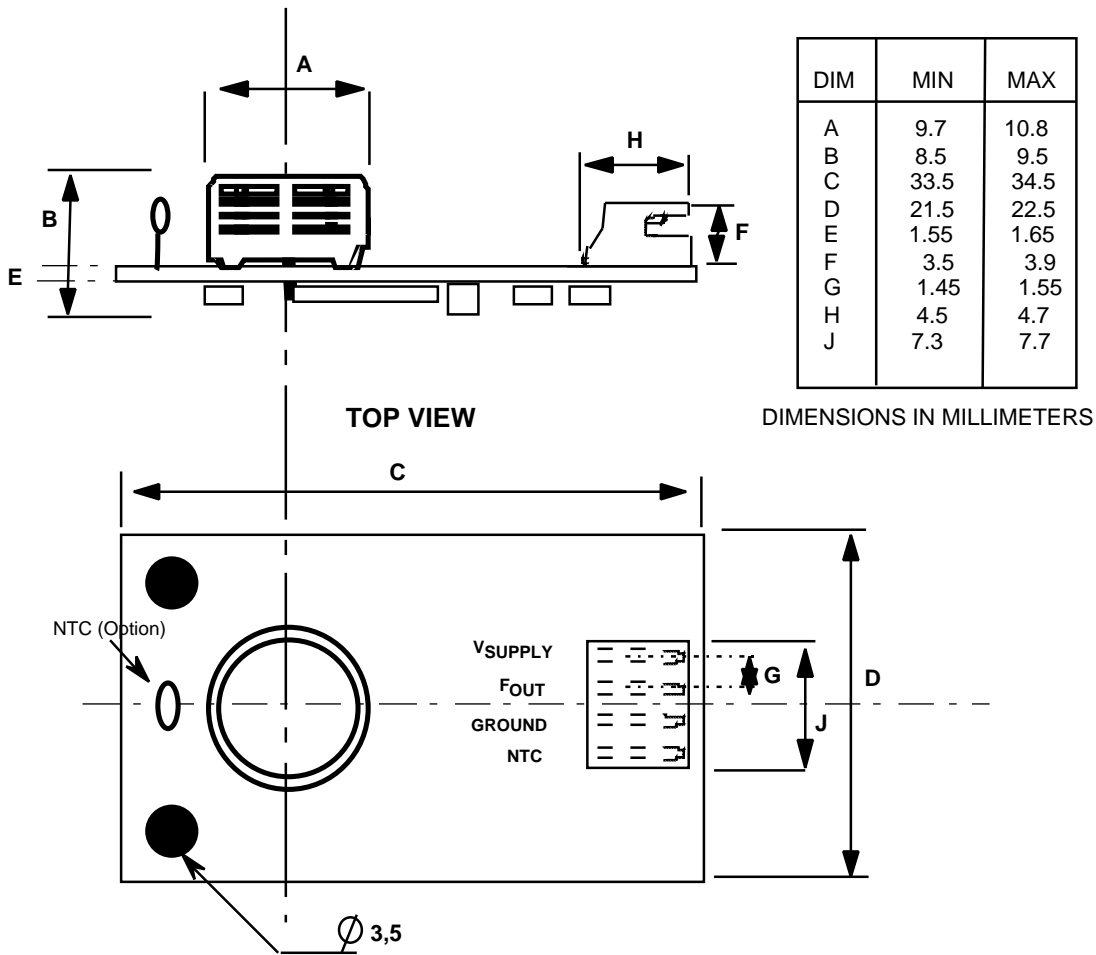
Typical response look-up table :

RH (%)	0	5	10	15	20	25	30	35	40	45	50
Fout (Hz)			9560	9470	9380	9290	9190	9110	9020	8930	8840
RH (%)	55	60	65	70	75	80	85	90	95	100	
Fout (Hz)	8750	8660	8570	8480	8390	8300	8210	8120	8030		

Calibration data are traceable to NIST standards through CETIAT laboratory.

Typical , Minimum and Maximum Frequency Values for HF3223



Package outline HF3223 / HTF3223

Connector type : JST model S4B-ZR

to be mated with ZHR or 04ZR type female connectors

ORDERING INFORMATION (Multiple Package Quantity of 70 pieces) :
HF3223 : Humidity Frequency output alone
HTF3223 : Humidity Frequency output + NTC (Temperature direct output)

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