



# RELATIVE HUMIDITY SENSOR

## HS24LF

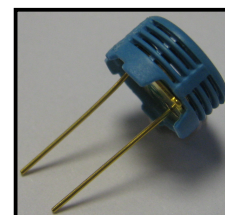
Preliminary Datasheet  
Meets RoHS regulations

Based on a unique resistive cell, these relative humidity sensors are designed for high volume, cost sensitive applications such as **air-conditioner, humidifier, dehumidifier, weather-forecast barometer, copying machine, humidity controller and most of the indoor applications.** They are also useful in all applications where humidity compensation is needed.

## MAIN FEATURES

- Lead free components
- Full interchangeability and outstanding repeatability
- Compatible with automatized assembly processes, including Pb free wave soldering and reflow processes (1)
- High reliability and long term stability
- Patented solid polymer structure
- Suitable for easy linear voltage output circuitry
- Fast response time
- Individual marking for compliance to stringent traceability requirements

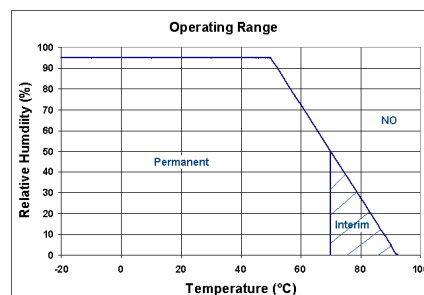
(1) soldering temperature profiles available on request / contact us at [applicationhumidity@meas-spec.com](mailto:applicationhumidity@meas-spec.com)



HS24LF Sensor

## MAXIMUM RATINGS

Ratings	Symbol	Value	Unit
Operating Temperature	Ta	-20 to 70	°C
Storage Temperature	Tstg	-20 to 70	°C
Supply Voltage (Peak)	Vs	tbd	Vac
Humidity Operating Range	RH	≤ 95%	%RH



## CHARACTERISTICS

Humidity sensor (Ta = 25°C, measurement frequency @ 1kHz / 1Vac unless otherwise noted)

Characteristics	Symbol	Min	Typ	Max	Unit
Humidity measuring range	RH	1		95	%RH
Supply voltage	Vs		1	tbd	V
Nominal resistance @ 60% RH*	C	20	31	50	kΩ
Temperature coefficient	Tcc		0.6		%/°C
Operating Frequency range	F	500	1000	2000	Hz
Humidity accuracy (@25°C, 60% RH)*	RH		± 5		%
Humidity Hysteresis			± 1		%RH
Time constant (33 to 80 % RH, still air @ 63%)	ta		3	5	s
Deviation to typical response curve (25% to 80% RH)			± 3		%RH

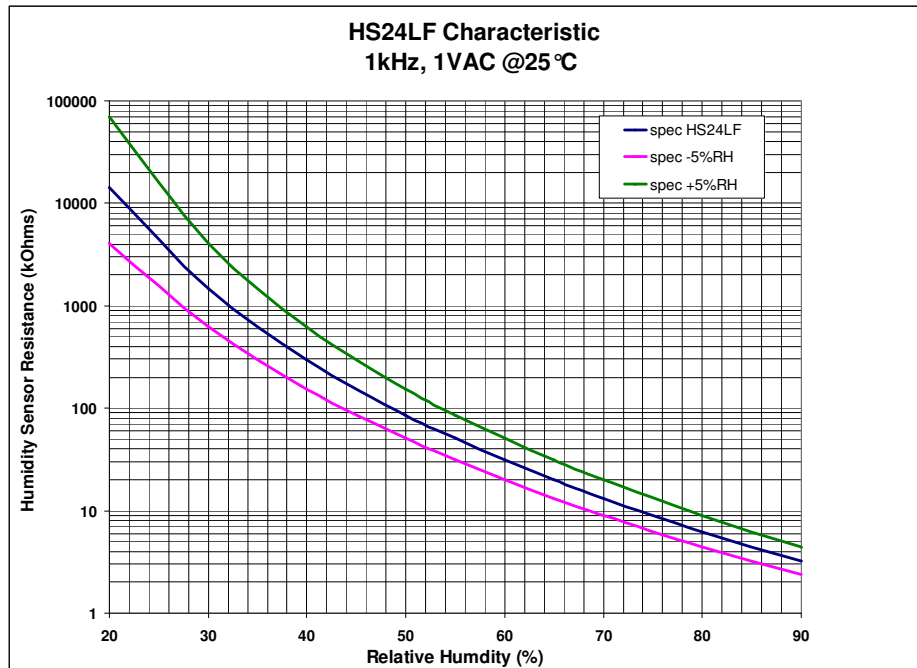
\*tighter specification available on request



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## TYPICAL RESPONSE

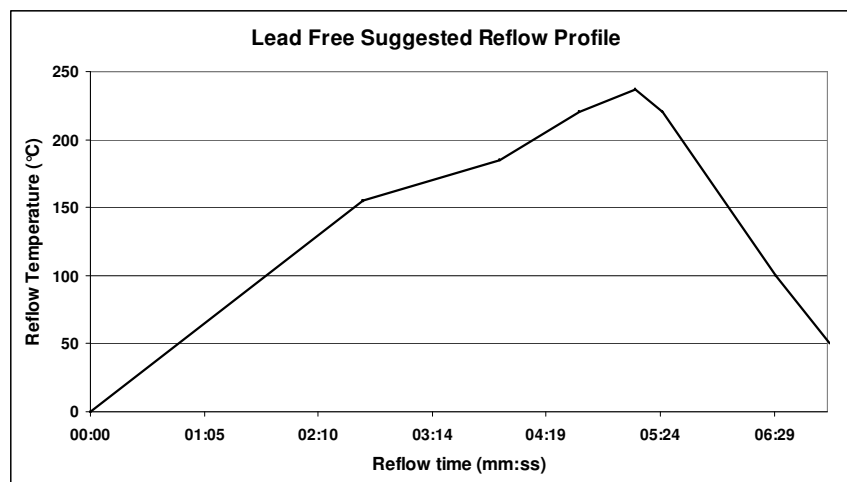


## MEASUREMENT FREQUENCY INFLUENCE

In this data sheet, all resistance measurements are done @ 1 kHz /1VoltAC. However, the sensor can operate without restriction from 500 Hz to 2 kHz.

## SOLDERING INSTRUCTIONS

We recommend taking specific attention to soldering conditions to get the best performance of MEAS France Humirel sensors. See below. To get any additional support, please contact: [applicationhumidity@meas-spec.com](mailto:applicationhumidity@meas-spec.com).

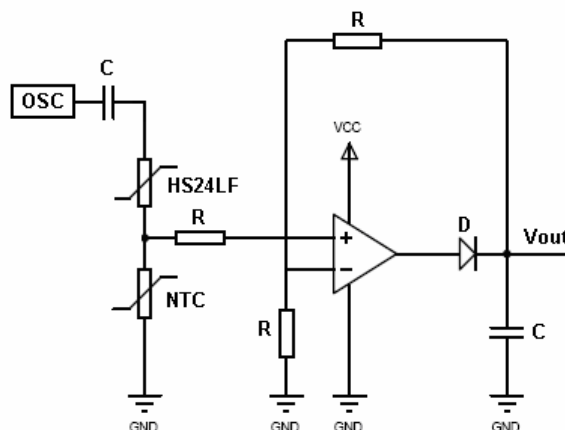


## PRECAUTIONS FOR USE

- Avoid DC voltage directly to humidity sensor.
- Avoid permanent condensation.
- Avoid application of the humidity sensor in the salt, inorganic gases and organic gases.

# PROPORTIONAL VOLTAGE OUTPUT CIRCUIT

## Block diagram



This circuit designed with HS24LF can be supplied by MEAS France Humirel.  
Ask for HTM226LF (HPP826A031 – ordering reference)

## HTM226LF Typical response look-up table

RH (%)	20	25	30	35	40	45	50
Vout (mV)	660	825	990	1155	1320	1485	1650
RH (%)	55	60	65	70	75	80	85
Vout (mV)	1815	1980	2145	2310	2475	2640	2805

## HTM226LF Typical response Equation

$$V_{out} = 0.033 * RH$$

## QUALIFICATION PROCESS

HS24LF sensors have been qualified through a complete qualification process taking in account many of the requirements of the JEDEC standard including:

- Solder heat and solderability including lead free process
- Pb free wave soldering and reflow soldering process(260°C)
- Mechanical shock JESD-22-B104-A
- Vibration - Variable frequency (20 to 2000Hz) JESD-22-B103-A
- Marking permanency
- ESD - Electrostatic Discharge –Air Gun +-15kV(IEC 1000)
- Temperature Shock - 40°C / +105°C
- Low Humidity storage life - RH < 10%/23°C - 1000 hours

## ENVIRONMENTAL AND RECYCLING

HS24LF sensors are lead free components and are compatible with Pb Free soldering processes.

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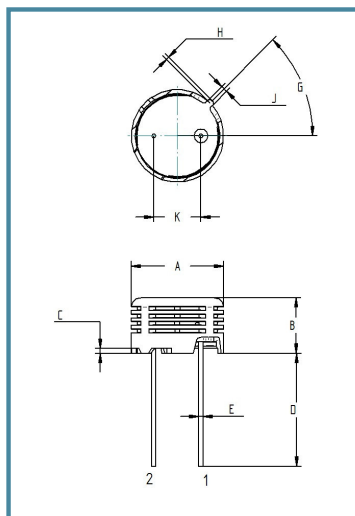
邮箱：[sales@sensorway.cn](mailto:sales@sensorway.cn)

<http://www.sensorway.cn>

HUMIREL HPC133 Rev.0 February 2008

# PACKAGE OUTLINE

Dimensions in millimeters



Dim	Min (mm)	Max (mm)
<b>A</b>	9.70	10.20
<b>B</b>	5.70	6.20
<b>C</b>	0.40	0.60
<b>D</b>	12.00	14.00
<b>E</b>	0.40	0.50
<b>G</b>	45° BCS	
<b>H</b>	0.70	1.10
<b>J</b>	0.70	0.90
<b>K</b>	4.83	5.33

## PACKAGE OUTLINE HS24LF (blue cap)

### ORDERING INFORMATION: HS24LF: HPP806A001 (MULTIPLE PACKAGE QUANTITY OF 48 PIECES) RESISTIVE RELATIVE HUMIDITY SENSOR

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