

## Humidity Sensors

### [self-quiz]

#### Should I measure humidity?

- Is your system part of machinery which is cooling, heating or drying or, more generally, consuming too much energy?
- Do you measure temperature or do you use information coming from temperature sensors?
- Are there regulatory constraints for the output of your system, such as emissions?

If you answer yes for at least one of those three questions, you may benefit by designing our reliable humidity sensor into your system to reduce energy consumption, lower emission level, improve accuracy or increase customer satisfaction. Our experienced engineers can review your application and demonstrate the immediate benefit. Email us at [romuald.gallorini@meas-spec.com](mailto:romuald.gallorini@meas-spec.com).

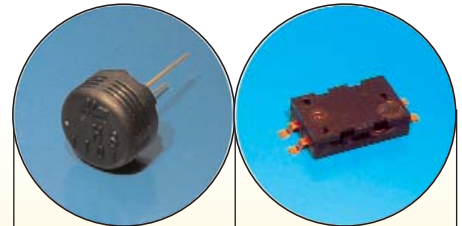
Humidity sensors can improve performance, reduce energy consumption and increase safety in a variety of applications. Increasingly, OEMs are designing relative humidity/temperature sensors into engines, electronics, and other products to improve control and output.

Measurement Specialties' humidity sensor business unit – also known as Humirel – is dedicated to the design, manufacturing, and sales of innovative humidity and temperature sensing solutions in a wide variety of OEM markets. Measurement Specialties' capacitive humidity sensing technology, which converts water absorption information into electrical output, offers accuracy from 2-5% and is highly repeatable. Packaged sensors, which include temperature sensors as a reference, can be used full scale from 0 to 100% relative humidity. Temperature ranges of operation are from -40°C to 125°C.

Measurement Specialties provides quality technical support and works closely with customers to develop competitively priced solutions and to reduce time to market. Sensors are available as components, modules with analog or digital output, or customized sub-systems, also known as application specific modules (ASMs). Products are designed, qualified and manufactured in Toulouse, France, a center of high tech and scientific excellence and the homeland of Airbus and the European Space Agency.

## Humidity and Temperature Sensors (Components)

RoHS compliant and lead-free soldering process compatible

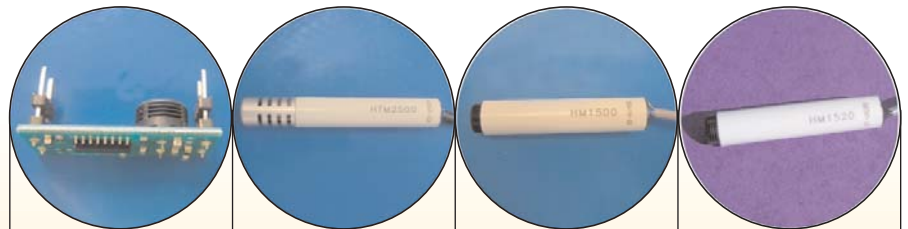


Model	HS1101LF	HTS20305MD
Type	Capacitive humidity sensors through hole mounting	Combined capacitive Humidity and NTC Temperature Sensor
Package Housing	Plastic Cap	SMD Package
Unique Feature	Compatible with wave and reflow processes	Compatible with reflow processes, available in tubes or reel
Size	6.89 x 10 mm	10 mm x 6.5 mm x 2.8 mm
Operating RH Range	0 to 100% RH	0 to 100% RH
Operating Temp Range	-60°C to 140°C	-60°C to 140°C
Applications	Weather station, hygrostat, humidifier, defogging /comfort	Weather station, hygrostat, humidifier, defogging /comfort



Humidity sensors from Measurement Specialties help HVAC systems run more efficiently.

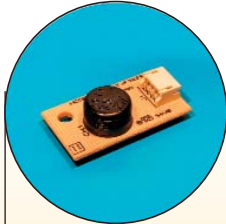
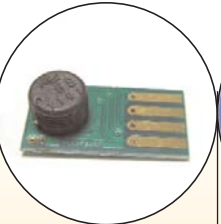
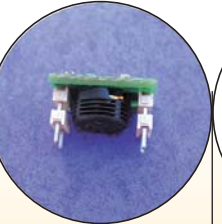
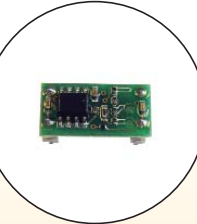
## Humidity and Temperature Voltage Output System (Analog)



Model	HTM1735	HTM2500	HM1500LF	HM1520LF
Type	PCB for board to board connection	Probe	Probe	Probe
Package Housing		Hermetic housing		Low humidity accuracy
Voltage supply (nominal)	5 Vdc	5 Vdc	5 Vdc	5 Vdc
Size	35 mm X 13 mm	75 mm X 11.5 mm	58 mm X 11 mm	58 mm X 11 mm
Calibration	Within +/-2% RH	Within +/-2% RH	Within +/-2% RH @ 55% RH	Within +/-2% RH @ 55% RH
Operating RH Range	0 to 100% RH	0 to 100% RH	0 to 100% RH	0 to 100% RH
Operating Temp Range	-40°C to 120°C	-30°C to 70°C	-30°C to 60°C	-30°C to 60°C
Applications	Weather station, printer	Hygrostat, data loggers	Medical, telecommunication cabinets	Medical, telecommunication cabinets

The letters "LF" in model numbers for PCB or modules indicated those parts are compliant with RoHS and Lead Free soldered. QA department is available to supply conformance certificates upon request. Email us at [laurent.berthezene@meas-spec.com](mailto:laurent.berthezene@meas-spec.com).

## Humidity and Temperature Frequency Output Systems (Digital)

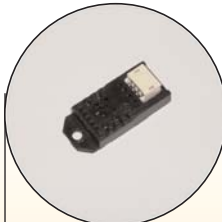

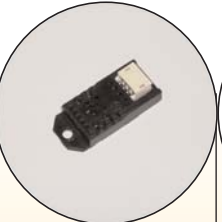

				
<b>Model</b>	HTF3226LF	HTF3227LF	HTF3000LF	HTF3130
<b>Type</b>	PCB	PCB	PCB	PCB
<b>Unique feature</b>	Miniature connector (JST) / very cost effective		Board to board connection	Board to board connection
<b>Voltage supply (nominal)</b>	5 Vdc	3 to 16 Vdc	3 to 16 Vdc	3 to 16 Vdc
<b>Size</b>	30 mm X 15 mm	28.5 mm X 15 mm	18 mm X 13 mm	18 mm X 13 mm
<b>Calibration</b>	Within +/-5% RH @ 55% RH	Within +/-3% RH @ 55% RH	Within +/-3% RH @ 55% RH	Within +/-3% RH @ 55% RH
<b>Operating RH Range</b>	0 to 100% RH	0 to 100% RH	0 to 100% RH	0 to 100% RH
<b>Operating Temp Range</b>	-30°C to 80°C	-30°C to 85°C	-40°C to 85°C	-40°C to 85°C
<b>Applications</b>	Inkjet plotter, color laser copier, humidifier, HVAC	Printers, hygrosat	Passenger comfort improvement, hygrosat	Passenger comfort improvement, hygrosat

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## Humidity and Temperature Mini-Modules

### Analog Voltage

### Digital Output (PWM)

				
<b>Model</b>	HTG351XCH	HTG353X	HTG341XCH	HTG343X
<b>Type</b>	Probe	Probe	Probe	Probe
<b>Unique feature</b>	Side connector (JST)	Board to board: through hole or SMD, Side connector (JST), Optional wiring connection	Side connector (JST)	Board to board: through hole or SMD, Side connector (JST), Optional wiring connection
<b>Voltage supply (nominal)</b>	X=3 for 3.3 Vdc / X=5 for 5 Vdc	X=3 for 3.3 Vdc / X=5 for 5 Vdc	X=3 for 3.3 Vdc / X=5 for 5 Vdc	X=3 for 3.3 Vdc / X=5 for 5 Vdc
<b>Size</b>	27 x 12 x 7 mm	27 x 12 x 7 mm	27 x 12 x 7 mm	27 x 12 x 7 mm
<b>Calibration</b>	within +/-3% RH @ 55% RH	within +/-3% RH @ 55% RH	within +/-3% RH @ 55% RH	within +/-3% RH @ 55% RH
<b>Operating RH Range</b>	0 to 100% RH	0 to 100% RH	0 to 100% RH	0 to 100% RH
<b>Operating Temp Range</b>	-40°C to +110° C	-40°C to +110° C	-40°C to +110° C	-40°C to +110° C
<b>Applications</b>	humidity and temperature plug and play transducers for OEM low cost applications	humidity and temperature plug and play transducers for OEM applications ( home appliance, printer)	humidity and temperature plug and play transducers for OEM low cost applications	humidity and temperature plug and play transducers for OEM applications ( home appliance, printer)

## Humidity and Temperature Application Specific Modules

Measurement Specialties' continuous R&D efforts deliver customized components for high volume markets. Sensing applications include:

- Displaying or recording ambient humidity content
- Compensating for the influence of humidity in order to improve the performance of equipments
- Reducing energy consumption in all heating, cooling and drying processes
- Minimizing health risks and improving safety when facing too high / low humidity contents

Measurement Specialties has application expertise in the following industries:



### Automotive and Truck

- Car fogging prevention
- Passenger comfort improvement
- Engine management
- Fuel cell control



### Industrial and Medical

- Hygrometers and Hygrostats
- Green houses
- Telecommunication cabinets
- Data loggers
- Food storage
- Respirators



### Home and appliance

- Clothes dryer
- Dishwashers
- Refrigerators
- Vent hoods
- Exhaust fans
- Humidifiers
- Dehumidifiers
- HVAC



### Consumer & printing

- Reprographics: inkjet plotter, laser copier, color laser printer
- Weather station