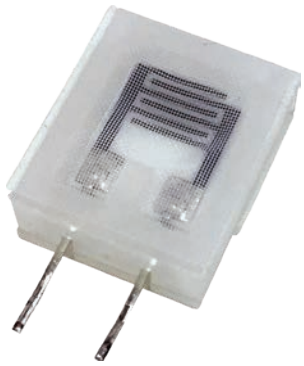
TELAIRE®

HS30P Relative Humidity Sensor



Telaire HS30P is a bulk-resistance type of Relative Humidity (RH) Sensor providing a variable impedance value in response to the adsorbed water within the sensor's proprietary thin-film polymer. Applied to an interdigitated electrode, the polymer's chemical functional groups disassociate into ionic groups in the presence of water, increasing the sensor's electrical conductivity. Excited by a low voltage alternating current, the sensor's resulting impedance is measured via supporting circuitry.

Features

- Low cost
- Low power
- Inverse exponential humidity response curve
- Fast response time
- Exceptional linearity
- Low hysteresis
- Excellent interchangeability
- Simple signal conditioning circuitry
- Wide operating range
- Small size

Applications

- HVAC controls
- White goods
- Handheld instruments
- Medical devices
- Wireless transmitters
- Asset monitoring
- Data loggers
- Consumer goods
- Automotive climate control
- Agriculture and horticulture
- Environmental chambers
- Enthalpy measurement

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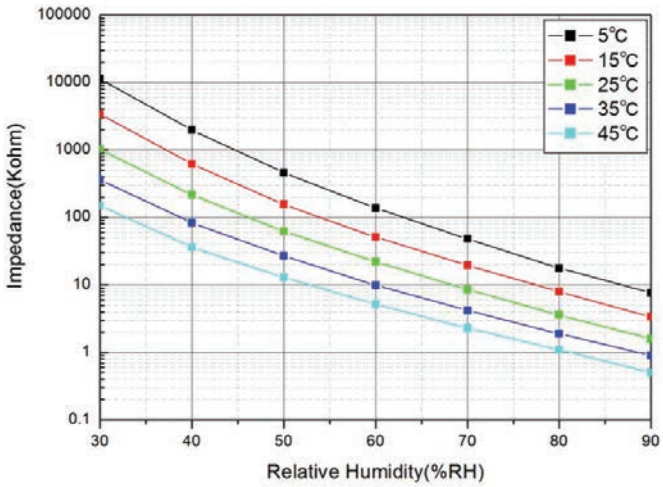
HS30P Specifications

Parameter	LIMITS			UNIT	CONDITION
	MIN	TYP	MAX		
Storage Temperature	-20		70	°C	
Storage Humidity	20		90	%RH	Without condensation
Operating Humidity	20		90	%RH	Do not allow dewdrops to form.
Operating Temperature	-20		60	°C	
Rated Power	AC 1V				50Hz~1KHz
Nominal Impedance Value		55		kΩ	25°C, 50%RH
Tolerance on Impedance Value	32.3		99.7	kΩ	

Reliability

Parameter	Criteria	Condition
Dry Heat Storage	<±5 %RH	70 , 1000 hours
Cold Storage	<±5 %RH	-25 , 1000 hours
Damp Heat Storage	<±5 %RH	60 ±6°C, 90~95%RH, 1000 hours
Heat Cycle Test	<±5 %RH	-25 ~70 , 500 cycles
Low Humidity Storage	<±5 %RH	20 , 20%RH, 1000 hours

Figure 1 - Typical Sensitivity Characteristics



HS30P Specifications (Cont.)

Figure 2 - Typical Response

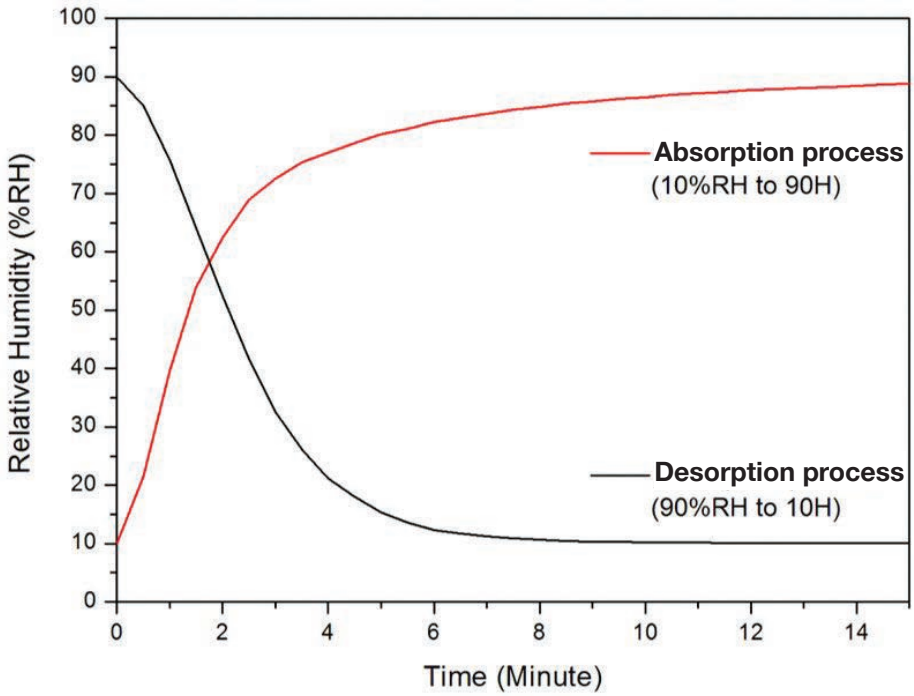
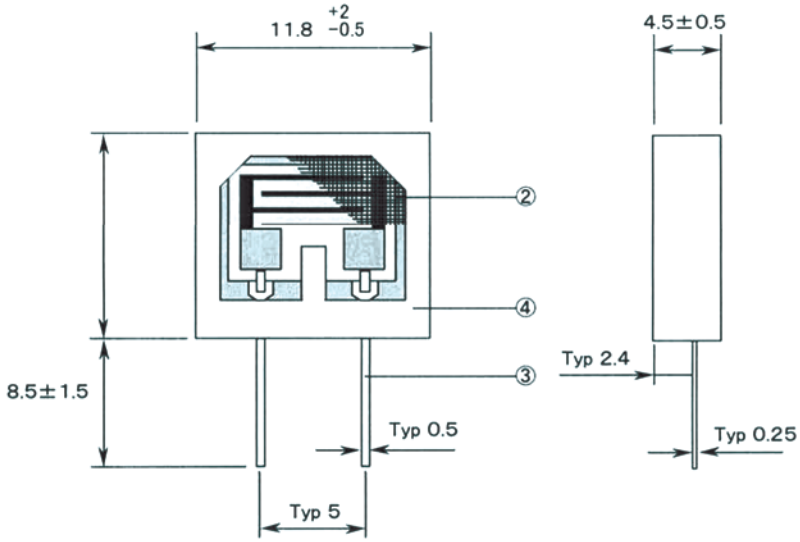


Figure 3 - Dimensions (Unit - mm)



No	Part Name	Material
1	Humidity Sensor	HS
2	Filter	Mesh
3	Lead	PBR
4	Case	Polypropylene (Color: White)

Recommended Handling Practices:

- Use only within specified conditions.
- Do not disassemble or change any parts.
- Do not touch sensor element.
- Do not apply any direct current to the sensor.
- Do not touch the film or surface of the sensor.
- In use and stock, freezing, dust, mist, oil, alcohol, corrosive gases or any other dirt/anomalous ambient may cause degradation of the sensor's characteristics.
- Protect the sensor film from flux/fume and high temperature during soldering.
- Do not immerse sensor in water.

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