

# HygroSmart I7000XP

## Interchangeable Sensor for Relative Humidity and Temperature

The HygroSmart I7000XP sensor is designed to accurately and reliably measure relative humidity and temperature in a wide spectrum of industrial and heavy industrial applications. The sensor uses the latest HygroSmart 3 technology, providing excellent performance across a wide customer measurement range and giving rapid field interchangeability to minimize customer maintenance costs on all Michell HygroSmart based probes and transmitters.



### Highlights

- Relative humidity and temperature measurement
- Accuracy  $\pm 1\%$  RH
- RH voltage output
- 30 second field interchangeability
- Traceable 5-point calibration certificate
- Ultra high resolution electronics
- Compact 14mm space envelope
- Suitable for integration into all HygroSmart transmitters and probes
- Operating range  $-40$  to  $+85^{\circ}\text{C}$
- Stability  $\pm 1\%$  RH per year

### Applications

- Food processing
- Pharmaceutical
- Environmental
- Meteorological
- Agricultural
- Power
- Energy
- Nuclear
- Paper processing
- Transportation

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## Technical Specifications

### Performance Specifications

<b>RH measurement range</b>	0 to 100% RH
<b>RH accuracy @ 23°C</b>	±1% RH (5 to 95% RH)
<b>RH thermal coefficient</b>	<0.03% RH/°C typical
<b>RH resolution</b>	0.1% RH
<b>RH measurement response time</b>	<10 seconds
<b>RH element and hybrid electronics</b>	HygroSmart 3 technology
<b>RH long term stability</b>	±1% RH per year
<b>Temperature technology</b>	PT100 1/3 DIN*
<b>Temperature measurement range</b>	-40 to +85°C
<b>Temperature accuracy</b>	±0.2°C
<b>Temperature resolution</b>	Infinite
<b>Recommended storage range</b>	+10 to +40°C

### Electrical Specifications

<b>Output signals</b>	<b>White housing:</b> 0-1 V <b>Black housing:</b> 0.2-1 V
<b>Temperature output signal</b>	<b>Standard:</b> 3-wire PT100 <b>Optional:</b> No output
<b>Digital output signal</b>	I <sup>2</sup> C interface
<b>Supply voltage range</b>	+5 V DC ±1 V
<b>Power consumption</b>	300µA @ 5 V

### Operating Specifications

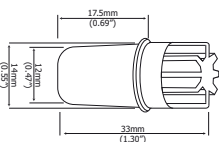
<b>Operating temperature</b>	-40 to +85°C
<b>Storage temperature</b>	-40 to +85°C

### Mechanical Specifications

<b>Housing material</b>	NORYL PPO UL94 V0
<b>Dimensions</b>	L=33mm, ø14mm
<b>Weight</b>	3g
<b>Electrical connections</b>	7 pins

\*Alternative temperature technologies available — consult Michell

## Product Dimensions



## The Stable Sensor

Process control customers need to have reliable and stable instrumentation giving repeatable data to the control system to minimize downtime, ensuring long-term process accuracy.

The I7000XP sensor stores its own unique calibration data within its integral electronics, ensuring 100% field interchangeability.

It uses the latest Michell advanced H8000 capacitive polymer element, developed over 40 years of specialization in challenging moisture measurements and now incorporated into this latest generation sensor.

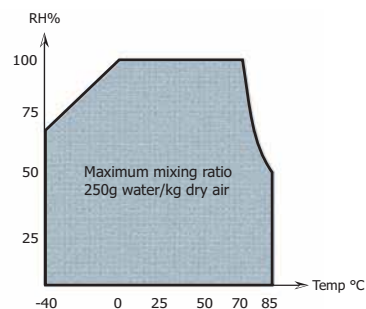
## Measurement Performance

The new H8000 capacitive polymer element and high resolution electronic hybrid technology, within the HygroSmart I7000XP interchangeable sensor gives outstanding accuracy across the complete RH and temperature spectrum.

- Interchangeable sensor accuracy ±1% RH
- ±1% RH long-term stability per year
- I<sup>2</sup>C digital interface

## Measurement Operating Envelope

The new HygroSmart I7000XP operates to the defined technical specifications within the following operating condition envelope:



The orange HygroSmart symbol is used to identify any Michell RH product which has the latest generation HS3 interchangeable sensor



The blue HygroSmart symbol identifies products using the I7000XP generation interchangeable sensor

## Related Products from Michell Instruments

 <p><b>HS3 Probe &amp; OEM Sensor</b> Advanced interchangeable RH and Temperature Probe</p>	 <p><b>DT282/292</b> Advanced 19mm Duct Mount RH and Temperature Transmitter</p>	 <p><b>WR283/293</b> Advanced Remote Probe RH and Temperature Transmitter</p>	 <p><b>DT284/294</b> Advanced 12mm Duct Mount RH and Temperature Transmitter</p>	 <p><b>PF211</b> HVAC Relative Humidity Probe</p>
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Michell Instruments adopts a continuous development programme which sometimes necessitates specification changes without notice.

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