

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

Technical Specifications

Performance Specifications

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

Electrical Specifications

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

Operating Specifications

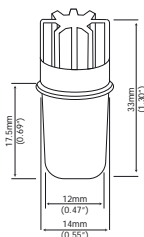
Operating temperature	-40 to +85°C
Storage temperature	-40 to +85°C

Mechanical Specifications

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

*Alternative temperature technologies available — consult Michell

Product Dimensions



This HygroSmart symbol is used to identify any Michell RH product which has an interchangeable sensor.

Related HygroSmart Products

Below are some of examples of other HygroSmart products from Michell Instruments:



DT282/292

Advanced 19mm Duct Mount RH and Temperature Transmitter



WR283/293

Advanced Remote Probe RH and Temperature Transmitter



DT284/294

Advanced 12mm Duct Mount RH and Temperature Transmitter



PF211

HVAC Relative Humidity Probe

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Michell Instruments adopts a continuous development programme which sometimes necessitates specification changes without notice.
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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
- I²C digital interface

Measurement Operating Envelope

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

