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 ±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°C
- Stability ±1% RH per year

Applications

- Food processing
- Pharmaceutical
- Environmental
- Meterological
- 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
Recommended storage range	+10 to +40°C

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^2C interface
Supply voltage range	+5 V DC ±1 V
Power consumption	300uA @ 5 V

Operating Specifications

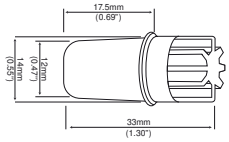
Operating temperature	–40 to +85°C
Storage temperature	–40 to +85°C

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



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.

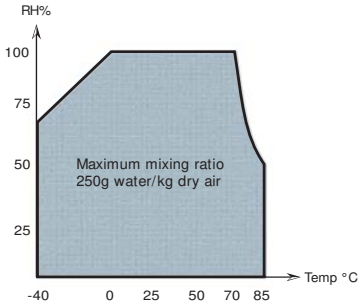
Measurement Performance

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^2C 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

HS3 Probe & OEM Sensor

Advanced interchangeable RH and Temperature Probe

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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