

HygroSmart HS3 OEM Sensor

Advanced Relative Humidity and Temperature Sensor

The HygroSmart HS3 OEM Sensor is an accurate, stable, low power sensor designed to provide repeatable humidity measurement in a wide range of OEM applications. The miniature HS3 OEM Sensor features the new HygroSmart 3 measurement technology providing both dual voltage and digital output signals across a wide temperature range.



Highlights

- Accuracy $\pm 0.8\%$ RH
- Low power consumption 300uA
- Sensor diameter 12mm
- Dual RH & temperature 1 V output
- Digital I²C output
- Supply voltage 3.3 to 7 V
- Traceable 5 point calibration
- Stability $\pm 1\%$ RH per year
- Sensor validation commissioning kit
- Operating temperature -40 to 120°C
- Loop checking simulator

Applications

- OEM component for general RH measurement/control products such as:
 - Food production and packaging
 - Incubators and hatcheries
 - HVAC
 - RH data loggers
 - RH portable instruments
 - Storage rooms

Maintaining Accuracy of Measurement

The HygroSmart HS3 OEM Sensor is comprised of RH & temperature elements, low power electronics and calibration data. The sensor uses the latest Michell advanced H8000 capacitive polymer element, developed as a result of over 40 years' experience in challenging moisture measurements, to provide accurate data in a wide variety of applications.

Output Signal Flexibility

The HygroSmart HS3 OEM Sensor been developed to offer a combination of analog and digital outputs to interface with a variety of OEM customers data acquisition systems:

- Dual 0 to 1 V outputs for RH and Temperature
- Digital I²C

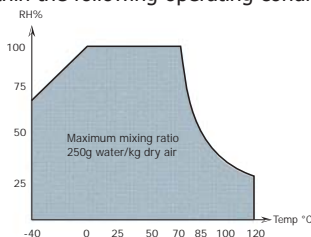
Tracking & Traceability

The HygroSmart HS3 OEM Sensor has the following features to simplify tracking the sensors for the customer's asset management and quality control systems:

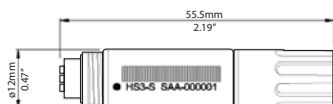
- Indelible alphanumeric serialization/bar coding of unique serial numbers for the HS3 OEM Sensor
- 5-point calibration certificate traceable to national standards with reprint service for misplaced certificates

Measurement Operating Envelope

The HygroSmart HS3 OEM Sensor operates to the defined technical specifications within the following operating condition envelope:



Product Dimensions



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

Related Products



HS3 Probe

Advanced Interchangeable Relative Humidity and Temperature Probe



PCMini 52

12mm RH and Temperature Mini Probe



WM281/291

Advanced Wall Mount RH and Temperature Transmitter



HygroCal100

Humidity Validator

Technical Specifications

Performance Specifications

RH measurement range	0 to 100% RH
RH accuracy @ 23°C (73°F)	±0.8% RH (5 to 95%RH)
RH thermal coefficient	<0.03% RH/°C typical
RH measurement response time	< 1 sec to RH event
RH element	Michell H8000
RH long term stability	±1% RH per year
Temperature measurement range	-40 to +120°C (-40 to +185°F)
Temperature accuracy	±0.2°C (±0.36°F)
Temperature resolution	±0.01°C
Temperature technology	PT1000 1/3 DIN Class B
Recommended storage range	+10 to +40°C (+50 to +104°F)
Calibration	Traceable 5-point calibration certificate

Electrical Specifications

Voltage output signals	0 - 1 V
Digital output signal	I ² C interface
Supply current consumption	300uA @ 5 V
Supply voltage range	3.3 to 7 V DC
Load impedance	50K Ω minimum
Configured voltage RH output	0 to 100% scaled 0 - 1 V
Configured voltage temp output	-20 to +60°C (-4 to 140°F) scaled 0 - 1 V
Other temperature scales are available on request	

Operating Specifications

Sensor operating temperature	-40 to +120°C (-40 to +185°F)
Sensor storage temperature	Recommended +10 to +40°C (+50 to +104°F)

Mechanical Specifications

Ingress protection	IP65 (NEMA 6)
Material	Sensor body: Solid glass filled PBT Filter assembly: HDPE or Moulded polymer & PVDF
Dimensions	L= 56mm, ø12mm
Weight	7.9g (0.02lb) approx
Electrical connections	Michell 6 pin custom M12 x 1mm
Product marking	Indelible laser etched alphanumeric/bar coded identification
Electrical mating connector	PCB mounting connector with locking nut

Commissioning Kits (Optional)

HS3 probe simulator kit	Desk-mounted configuration kit, 3 x sensor simulators (25%, 50%, 75%RH at 23°C), spare probe electronics, carry case
HS3 probe configuration kit	Desk-mounted configuration kit, spare probe electronics, carry case

Michell Instruments Ltd, Rotronic Instruments Corp. 135 Engineers Road, Suite 150, Hauppauge NY 11788

Tel: 631 427 3898, Email: us.info@michell.com, Web: www.michell.com/us

Michell Instruments adopts a continuous development programme which sometimes necessitates specification changes without notice.

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