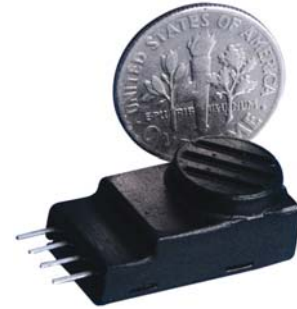


The innovative HS-2000D Humidity Sensor combines capacitive-polymer sensing technology with a novel measurement method, eliminating the need for temperature correction and calibration by the user. The sensor, which is calibrated at Precon before shipment, includes a thermistor and circuitry to correct for temperature and calculate the true relative humidity. The sensor provides both humidity and temperature outputs and is accurate to $\pm 2\%$.

The output of the HS-2000D is 9600 baud RS-232 ASCII text compatible with any PC or microprocessor with a serial port. The HS-2000D is powered through the serial port and does not require a separate power supply.

The HS-2000D covers a standard temperature range of -30 to +85 °C, while the HS-2000DE covers an extended temperature range of -30 to +100 °C.

The four-pin connection provides for easy installation or replacement in the field, reducing the overall cost to maintain large or complex systems.



Features

- RH & Temperature Outputs
- Temperature Compensated
- Digital Output
- Factory Calibrated
- Accurate to $\pm 2\%$
- Field Replaceable
- Good stability
- Excellent Chemical Resistance
- Low cost

Evaluation Kit Available

Typical Applications

- OEM Equipment ▪ Medical
- HVAC ▪ Pharmaceutical
- Computer Rooms ▪ Industrial
- Critical Space Monitoring
- Weather Metrology
- Humidifiers ▪ Data Logging
- Automation ▪ Refrigeration
- Environmental Chambers
- Laboratory ▪ Clean Rooms

<u>MAXIMUM RATINGS</u>	
Operating Temperature...	-30 to +85 °C (HS-2000D) -30 to +100 °C (HS-2000DE)
Storage Temperature.....	-40 to +125 °C
Operating Humidity Range.....	0-100 percent
Supply Voltage (from serial port)...	± 15 volts
Soldering Temperature.....	10 sec at 250 °C (520 °F)

FIG. 1 OPERATING CONDITIONS

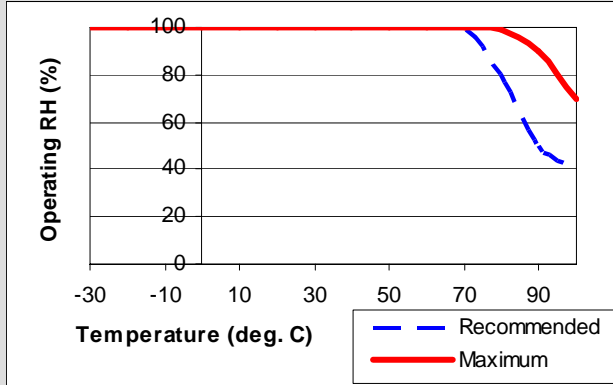


FIG. 2 RH ACCURACY

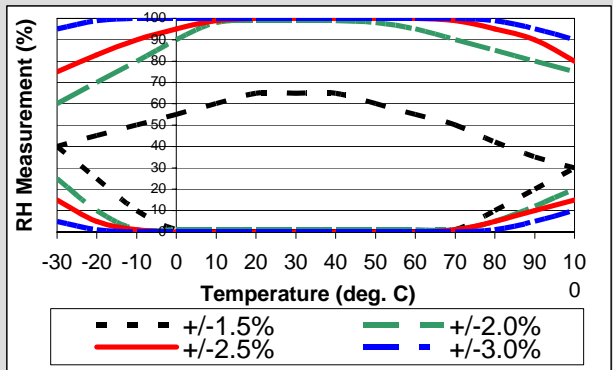
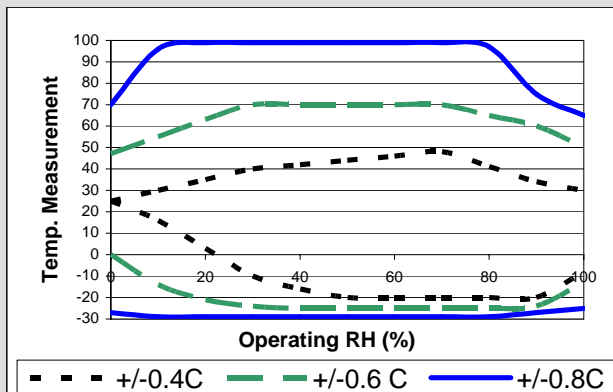
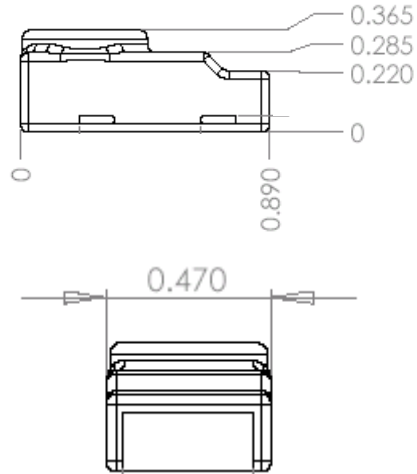


FIG. 3 TEMPERATURE ACCURACY



Dimensions



Tolerance on all dimensions ± 0.005 inch

Ordering Information

MODEL NUMBER	DESCRIPTION
HS-2000D	Relative humidity and temperature sensor: RS-232 compatible output; RH range: 0 to 100%; Temperature range: -30 to +85 °C
HS-2000DE	Relative humidity and temperature sensor: RS-232 compatible output; RH range: 0 to 100%; Temperature range: -30 to +100 °C

Application Notes

1. Sensor Self-Heating: The HS-2000D dissipates up to 75 milliwatts when operating and can generate sufficient heat to cause shifts in relative humidity and temperature measurements. The sensor duty cycle should be limited to 10% or less to prevent self heating. The sensor should only be powered by raising the RTS line high while a measurement is being taken. The RTS line should then be driven low. A blocking diode incorporated in the sensor prevents any power dissipation when the RTS line is low. The software used to read data from the HS-2000D must properly drive the RTS line in addition to reading the sensor data. The data logging and display application program supplied with the sensor will properly drive the RTS line. Sample code is also available in both C and BASIC to assist in custom application development

2. PCB Connectors: It is recommended that HS-2000D be socketed rather than soldered to circuit boards. If a direct solder connection is required, it is recommended that hand-soldering be performed using a rosin-based flux. The soldered surfaces may be cleaned with isopropyl alcohol (do not immerse).

The recommended PCB sockets include:

Surface Mount:

Mill-Max: 310-93-104-41-105, 4 pin SMT, Left hand footprint, 30 micro inch gold plate

Mill-Max: 310-93-104-41-107, 4 pin SMT, Right hand footprint, 30 micro inch gold plate

These sockets are available from Digi-Key in 64 pin strips. See part number ED23064-ND

Through hole:

Mill-Max: 310-93-104-41-001, 4 pin standard solder tail, 30 micro inch gold plate

These sockets are available from Digi-Key in 63 pin strips. See part number ED7063-ND

4. Chemical Resistance: Contact Precon for data on resistance to specific chemicals and environments.

Warranty

WARRANTY: The Seller warrants that Warranted Goods shall not fail to function in accordance with the seller's specifications because of defects in material or workmanship, for one year from the date of purchase. The foregoing warranty is expressly in lieu of all other warranties, express or implied, including warranties of merchantability or fitness for a particular purpose, or any other matter with respect to the goods are excluded and shall not apply to the goods sold. The warranty undertaking in this agreement does not apply to any goods that have been subjected to accident, disaster, loss or damage during shipment, neglect, misuse, improper installation, corrosive atmosphere harmful to electronic circuitry, excessive electromagnetic fields, failure or insufficiency of electrical power or unusual electrical surge or shock, nor to dysfunction or malfunction of, or caused by, any other equipment or device (other than equipment or devices you have purchased from us) to or in which such goods have been attached or installed.

Seller's employees, agents and/or representatives may have made oral statements about the goods sold or to be sold. Such statements DO NOT constitute warranties and ARE NOT part of a sales Contract. Seller's liability to Buyer, their agents, employees, customers, assigns, successor or other related parties for any and all losses or damages resulting from Seller's breach of a sales Contract, whether in tort or in contract or otherwise, shall be limited to the replacement of a like quantity of goods sold and IN NO EVENT SHALL SELLER BE LIABLE FOR SPECIAL, INDIRECT, INCIDENTAL, CONSEQUENTIAL, OR CONTINGENT DAMAGES (including, without limitation, loss of anticipated profits, business interruption, loss or use or revenue, litigation costs, cost of capital, Buyer's fixed costs, or avoidable costs).

All specifications are subject to change without notice. For the latest specifications, visit our website at www.preconusa.com