

# Temperature and Humidity Virtual Chart Recorder

## iTHX Series



- Web Server
- Alarms by Email or Text Message
- No Special Software Required
- Records Years of Data on Popular SD Cards
- Dual Probe Option

## iServer

### View Temperature + Humidity with a Web Browser

The OMEGA® iTHX-SD transmitter let's you monitor and record Temperature, Relative Humidity and Dew Point over an Ethernet network or the Internet with no special software except a Web Browser. The iTHX-SD serves Active Web Pages to display real time readings, display charts of temperature, humidity, and dew point or log data in standard data formats for use in a spreadsheet or data acquisition program such as Excel or Visual Basic.

The virtual chart viewed on the web page is a JAVA™ Applet that records a chart over the LAN or Internet in real time. With the iTHX-SD, there is no need to invest time and money learning a proprietary software program to log or chart the data.

### SD Flash Memory Card

The iTHX-SD comes complete with a removable 2 GB SD Flash Memory card that can store up to seven years of readings taken at ten second intervals.

### Records on SD Flash Cards

The data is recorded on widely available SD (Secure Digital) flash cards. The format is a simple text file that is easily imported to spread sheets and other programs. It can be read on a PC or MAC with a USB card reader. You can also download the data remotely over an Ethernet network or the Internet.

### Alarm Relays

The iTHX-SD features two 1.5 Amp relays. With the easy Web-based setup page, the two relays can be programmed for an combination of temperature or humidity, and high or low set points. The relays can also be programmed to remain latched and require a manual reset if a limit is exceeded.

### Battery Backup

The iTHX-SD comes with a universal 100 to 240 Vac power adapter. A standard 9 Volt Alkaline battery (also included) allows the device to log data for up to 2 days without external ac power. A failure on the Ethernet network will not interrupt data recording.

### Adjustable Charts

Chart scales are fully adjustable on the fly. For example, the chart can display one minute, one hour, one day, one week, one month or one year. Temperature and humidity can be charted across the full span (-40 to 124°C, and 0 to 100% RH) or within any narrow range such as (20 to 30°C). When a second sensor is added, users can select a chart that records channel 1, channel 2 or the difference of the two channels.

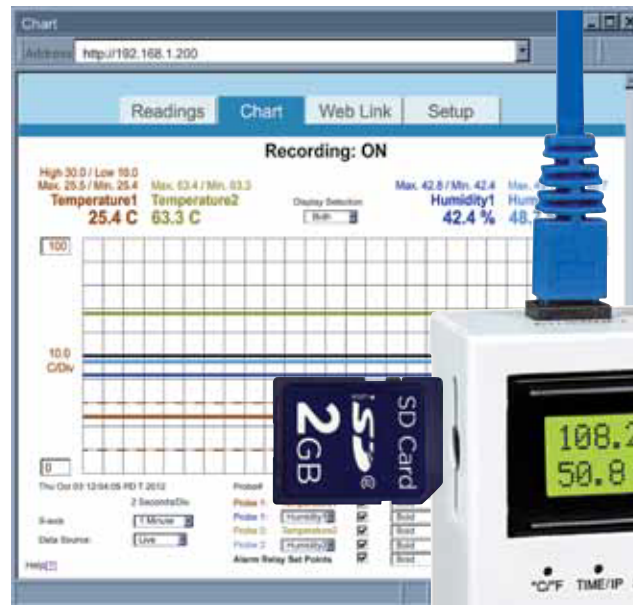
### Award-Winning Technology

The iTHX-SD is simple to install and use, and features OMEGA's award-winning iServer technology that

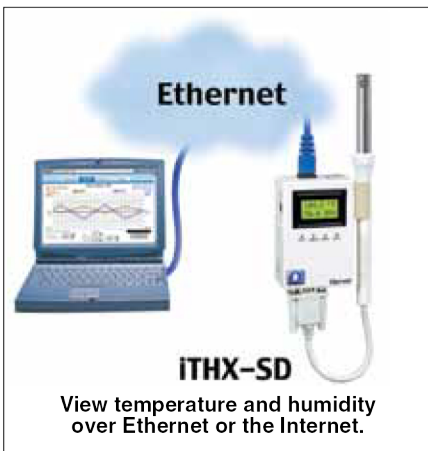
requires no special software except a Web Browser.

The iTHX-SD connects to an Ethernet Network with a standard RJ45 connector and sends data in standard TCP/IP packets. It is easily configured with a simple menu using a Web Browser and can be password protected.

From within an Ethernet LAN or over the Internet, the user simply types its IP address or an easy to remember name such as "Cleanroom5" or "ServerRoom" in any Web Browser, and the iTHX-SD serves a Web Page with the current readings.

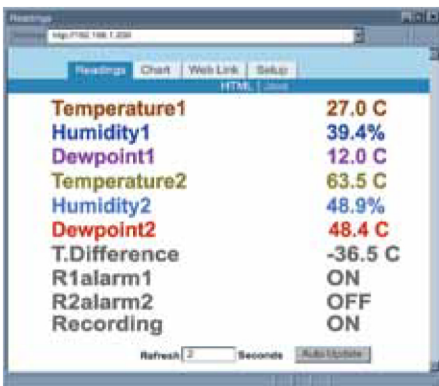


iTHX-SD-SD shown smaller than actual size with SD card and DB9-Y cable for dual probe (included).



## Typical Applications

The iTHX-SD is great for monitoring temperature + humidity in applications such as: clean rooms, computer rooms, HVAC systems, pharmaceutical and food processing and storage, hospitals, laboratories, semiconductor fabs, electronic assembly, warehousing, museums, manufacturing, greenhouses, farm animal shelters, and many more.



Readings through embedded Web server

## Sensor Specifications

### RELATIVE HUMIDITY (RH)

**Accuracy/Range at 25°C - Non-Condensing:**

10 to 90%: ±2.75%

5 to 10% and 90 to 95%: ±3%

0 to 5% and 95 to 100%: ±4%

**Non-linearity:** ±3%

**Hysteresis:** ±1%RH

**Response Time:** 8 seconds, tau 63%

**Repeatability:** ±0.1%

**Resolution:** 0.1%, 12 bit

### TEMPERATURE (T)

**Accuracy/Range\***

**Wand Probe:** ±0.5°C (±1°F) for 5 to 45°C (41 to 113°F); up to ±1°C (up to ±2°F) for 0 to 5°C and 45 to 60°C (32 to 41°F and 113 to 140°F)

**Industrial Probe:** (see chart in manual) ±0.5°C (±1°F) for 5 to 45°C (41 to 113°F); up to ±1.5°C (up to ±2.7°F) for -40 to 5°C and 45 to 124°C (-40 to 41°F and 113 to 255°F)

\*Note: extended temperature range is for Ind. probe only, the iServer's operating temperature is 0 to 60°C

**Response Time:** 5 to 30 seconds, tau 63%

**Repeatability:** ±0.1°C

**Resolution:** 0.1°C, 14-bit

## Probe Specifications

**Wand Probe:**

198 L x 19 mm Dia (7.8 L x 0.75" Dia)

**Cable with DB9 Connector:** 152 mm L (6" L)

**Cable Operating Temperature:** 0 to 80°C (32 to 176°F)

## Industrial Probe iTHP-5, iTHP-2:

137 L or 51 L x 16 mm Dia (5 L or 2 L x 0.63" Dia)

**Housing Material:** 316 SS

**Cable with DB9 Connector:** 3 or 0.9 m L (10 or 3')

**Cable Operating Temperature:** -40 to 125°C (-40 to 257°F)

## iServer Specifications INTERFACES

**Ethernet:** (RJ45)

Fixed or auto-negotiating  
10/100BASE-T, Auto MDI/MDIX

**Supported Protocols:**

TCP, UDP, SNMP, SMTP, NTP, ARP, ICMP, DHCP, DNS, HTTP and Telnet

**Sensor:** Digital 4-wire, DB9

**LCD Display:** 16 digits, 6 mm (0.23")

**SD Flash Memory Card:**

2GB card: 8 months of data storage at 1 second recording intervals or 7 years at 10 second intervals

**Relay Outputs:**

Two relays 1.5 A @ 30 Vdc

**Embedded Web Server:**

Serves Web pages containing real-time data and live updated charts within definable time intervals

**Software:** OPC Server; macro for datalogging in Excel program; compatible with Windows operating systems

## Power

**Input:** 9 to 12 Vdc

**Safety qualified AC power adapter:**

**Nominal Output:** 9 Vdc @ 0.5 A

**Input:** 100 to 240 Vac, 50/60Hz (included)

**Back-up Battery:**

9 Vdc, alkaline (included)

## ENVIRONMENTAL

**Operating Temperature:**

**iServer unit:** 0 to 60°C (32 to 140°F)

**Battery:** -18 to 55°C (0 to 131°F)

**ac Adapter:** 0 to 40°C (32 to 104°F)

**Storage Temperature:** -40 to 85°C

(-40 to 185°F)

## Packaging

**Material:** Steel metal case with wall mount bracket

## Email Alarms

All OMEGA iTHX-SD models that are on a LAN that is connected to the Internet can trigger an alarm that can be sent by email to a user or a distribution list anywhere in the world, including text messages to cell phones and PDA's.

## Link to Web CAM or IP Camera

The Web page includes a link to a "Web Cam" or "IP camera" (not included). If you get a message about an alarm condition, you can quickly click on the link to view the actual scene over the Internet.

## Display and Chart Two Channels

The iTHX-SD transmitters come complete with a temperature and humidity probe for measurement of a single location. With the addition of a second probe, the iTHX-SD transmitter can measure and display temperature, humidity and dew point in a second location up to ten feet away.

The transmitter can display and chart absolute measurements in both locations, or a differential measurement between the two locations. The second probe requires no change to the basic iTHX-SD transmitter hardware, it can be added at the time of purchase or in the future. OMEGA offers a choice of industrial probes in 2 and 5" lengths, and a wand style for ambient indoor applications. A simple DB-9 "Y" connector is available for adding a second probe.

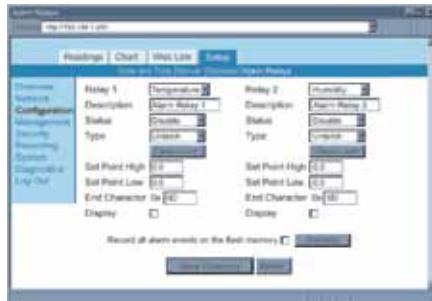
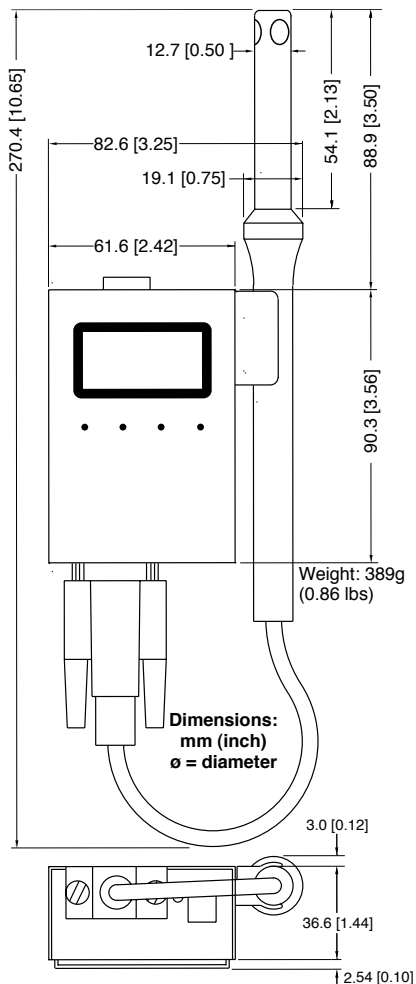
## Sensor and Calibration

It is not necessary to take the iTHX-SD out of service for routine calibration. The temperature/humidity sensors are interchangeable and can be replaced for about the same cost as a typical calibration. OMEGA offers replacement sensors with optional 3-point NIST traceable calibration certificates.

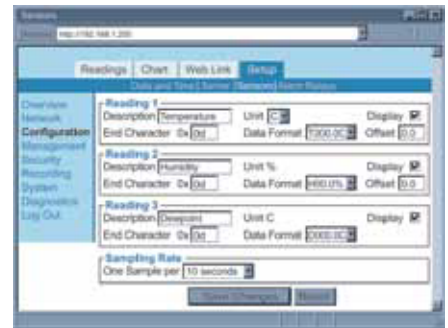
**NIST-Traceable Calibration Certificate available.**

**In compliance with ISO9001:2008, ISO10012-1.1992(E), ANSI/NCSL Z540-1.1994 and MIL-STD-45662A.**





**Alarm relay configuration through embedded Web server**



**Sensor configuration**



**Recording Setup**

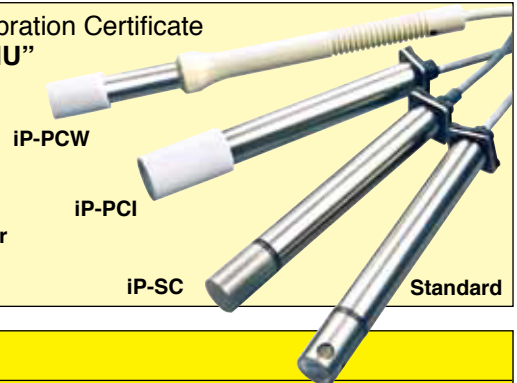


**Data logging spreadsheet**

Replacement Probes with Calibration Certificate available, just add: **"-CAL-3-HU"**

Optional Probe Caps shown

No need to take your unit out of service for routine calibration. Order a calibrated probe instead.



To Order	
Model No.	Description
<b>iTHX-SD</b>	iServer MicroServer™ for Temp, Humidity, and Dew Point. Includes standard 203 mm (8") wand probe, cable 152 mm (6") with DB9 connector
<b>iTHX-SD-2</b>	iServer MicroServer™ includes industrial 51 mm (2") probe, cable 0.9 m (3') with DB9 connector
<b>iTHX-SD-5</b>	iServer MicroServer™ includes industrial 137 mm (5") probe, cable 3 m (10') with DB9 connector
<b>iTHX-SD-WD</b>	iServer MicroServer™ includes two wand probes and "Y" cable
<b>iTHX-SD-2D</b>	iServer MicroServer™ includes two probes, wand and 51 mm (2") industrial probe with 0.9 m (3') cable and "Y" cable
<b>iTHX-SD-5D</b>	iServer MicroServer™ includes two probes, wand and 137 mm (5") industrial probe with 3 m (10') cable and "Y" cable
Accessories	
<b>iTHP-W-6</b>	Wand probe 203 mm (8"), cable 152 mm (6")
<b>iTHP-2-DB9</b>	Industrial probe 51 mm (2"), cable 0.9 m (3')†
<b>iTHP-5-DB9</b>	Industrial probe 137 mm (5"), cable 3 m (10')†
<b>DB9-CA-3</b>	Extension cable, 0.9 m (3') with DB9 connectors
<b>DB9-Y</b>	DB9 "Y" connector adaptor for 2 probes with DB9 connector
<b>iP-PCI-10P</b>	Porous polyethylene industrial probe cap, for wet environments, 10 caps per pack
<b>iP-PCW-10P</b>	Porous polyethylene wand probe cap, for wet environments, 10 caps per pack
<b>iP-SC</b>	Porous stainless steel probe cap, 5 um porosity, for dusty, pressurized (<35 psi) environments
<b>CAL-3-HU</b>	NIST traceable calibration certificate. 3 points of 25%, 50%, 75% RH, temperature 25°C (77°F), for new units
<b>CT485B-CAL-KIT</b>	Calibration kit, 33% and 75% RH standards
<b>* -CAL-3-HU</b>	Calibrated replacement probe and NIST traceable calibration certificate (for * insert probe type)

† Other lengths of cable (up to 40') are available, please contact our Sales Department. Note: Volume discounts are available.  
 Ordering Examples: iTHX-SD with LCD display, SD card, 2 relay alarm, battery back-up and wand probe.  
 iTHP-W-6-CAL-3-HU , calibrated replacement probe with certificate.