

# Compact Wireless Sensor System



## zSeries



- ✓ Temperature
- ✓ Humidity
- ✓ Barometric Pressure
- ✓ Alarms by Email and Text Message
- ✓ Web Server
- ✓ Compatible with zSeries Long Range End Devices
- ✓ No Special Software Required

The OMEGA® zSeries wireless sensor system provides Web-based monitoring of temperature, humidity, and barometric pressure in critical HVAC and refrigeration applications.

The compact wireless “End Devices” mount discretely on the wall in clean rooms, laboratories, museums, computer server rooms, warehouses, and any remote facility. The wireless End Devices are powered by two “AA” 1.5V alkaline batteries (included).

The End Devices transmit up to 91 m (300') (without obstructions or interference) to a “Coordinator” connected directly to an Ethernet network and the Internet. The wireless system complies with IEEE 802.15.4 operating at 2.4 GHz.

The OMEGA zSeries system let's you monitor and record temperature, relative humidity, and barometric pressure over an Ethernet network or the Internet without any special software-just your Web Browser.

OMEGA offers a selection of End Devices for a variety of applications. Each End Device supports 1, 2 or 3 internal sensors. If you need an external probe for your application, check out the zED-P Series.

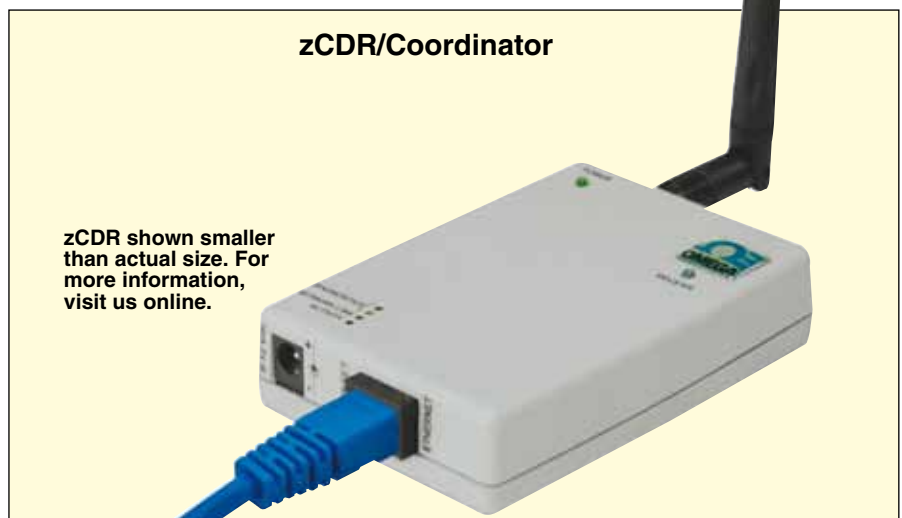


zED-T, includes two “AA” 1.5V alkaline batteries, shown smaller than actual size.



Each zSeries Coordinator can directly support up to 32 end devices. The Coordinators include AC adaptors to operate on any voltage worldwide from 100 to 240 Vac and 50 to 60 Hz.

The Coordinator connects directly to an Ethernet Network or the Internet. Unlike an RS232 or USB device, it does not require a host computer.



zCDR shown smaller than actual size. For more information, visit us online.

zED-TC-LCD-DC-H2 shown smaller than actual size.



**Long Range End Devices Available**

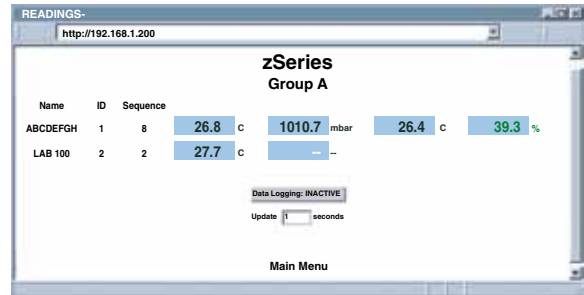
- ✓ Temperature
- ✓ Barometric Pressure
- ✓ Humidity
- ✓ Dual Thermocouple
- ✓ Analog Voltage or Current

The zSeries Coordinator is an independent node on the network sending and receiving data in standard TCP/IP packets. It is easily configured from a Web Browser and can be password protected. From within an Ethernet LAN or over the Internet, the user simply types the IP address (such as 192.168.1.200) or an easy to remember name (such as "Warehouse 5" or "Chicago Lab") and the Coordinator serves a Web Page with the current readings.



The device can trigger an alarm if variables go above or below a set point that you determine. Your alarm can be sent by email to a single user or to a group distribution list, including text messages to Internet enabled cell phones and PDA's. The OMEGA "Mail Notifier" software is a free and easy program for this application.

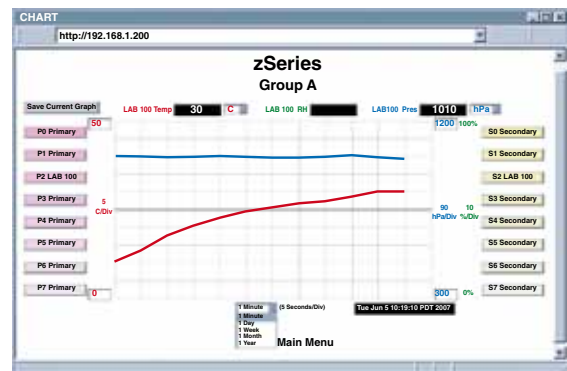
The OMEGA zSeries wireless sensor system is easy to install, simple to operate, and features OMEGA's award-winning iServer technology with an Embedded Web Server that requires no special software.



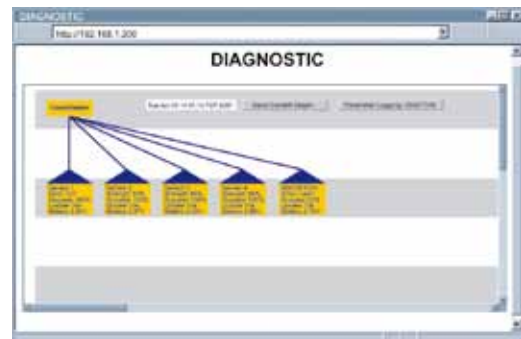
The OMEGA zSeries system serves Active Web Pages to display real time readings and charts of temperature, humidity, and barometric pressure. You can also log data in standard data formats for use in a spreadsheet or data acquisition program such as Excel or Visual Basic. OMEGA offers a free and easy to use program for logging data to Excel.

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 OMEGA zSeries system there is no need to invest time and money learning a proprietary software program to log or chart the data.

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 125°C, and 0 to 100% RH) or within any narrow range such as (20 to 30°C).



OMEGA offers an OPC Server software that makes it easy to integrate the zSeries wireless sensor system with many popular Data Acquisition and Automation programs offered by OMEGA, Wonderware, iConics, Intellution, Rockwell Automation, and National Instruments, among others.

## SPECIFICATIONS

### SENSOR SPECIFICATIONS (ZED)

#### Relative Humidity

**Accuracy/Range zED-BTH, zED-TH:**

±2% for 10 to 90%; ±3% for 0 to 10% and 90 to 100%

**Hysteresis:** ±1% RH

**Non-linearity:** ±3%

**Repeatability:** ±0.1%

**Resolution:** 0.1%

#### Temperature

**Accuracy/Range**

**zED-T**

±0.5°C for 10 to 55°C (±0.9°F for 50 to 131°F)

±1°C for -18 to 10°C (±1.8°F for -0.4 to 50°F)

**Accuracy/Range**

**zED-BTH, zED-TH**

±0.5°C for 0 to 45°C (±0.9°F for 32 to 113°F)

±1°C for -18 to 0°C and 45 to 55°C (±1.8°F for -0.4 to 32°F and 113 to 131°F)

**zED-BT:**

±0.8°C @ 20°C (±1.5°F @ 68°F)

±2°C for -18 to 55°C (±3.6°F for -0.4 to 131°F)

**Repeatability:** ±0.1°C for zED-BTH, zED-TH, -THP

**Resolution:** 0.1°C

#### Barometric Pressure

**Accuracy/Range zED-BTH:**

±2 mbar for 10 mbar to 1100 mbar (1 KPa to 110 KPa)

**Resolution:** 0.1 mbar

#### Interface (zCDR)

**Ethernet:** 10Base-T (RJ45)

**Supported Protocols:** TCP/IP, ARP, ICMP, DHCP, DNS, HTTP, and Telnet

**LED Indicators:** Network Activity, Network Link, Diagnostics, Receive and Power

**Management:** Device configuration and monitoring through embedded WEB server

**Embedded WEB Server:** Serves WEB pages (JAVA™ Applets) containing real-time data and live updated charts within definable time intervals



zED-T shown smaller than actual size.

#### Power (zCDR):

**Power Input:** 9 to 12 Vdc

**Consumption:** 2.5 W max

**Safety Qualified AC Power Adaptor:** Included

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

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

**Power Adaptor Operating Temperature:** 0 to 40°C (32 to 104°F)

#### (zED):

**Alkaline Battery:** Two 1.5 Vdc (included)

**Lifetime:** Estimate of 2 years with frequency of 1 reading per 2 minutes

#### Wireless Communication

**Protocol:** IEEE 802.15.4

**Frequency:** 2.4 GHz (2400 to 2483.5 MHz), DSSS, 16 channels

**Network Topology:** Star Topology

**Range:** Up to 91 m (300') without obstructions or interference

#### Environment

**Operating Temperature:**

zED: -18 to 55°C (-0.4 to 131°F)

zCDR: 0 to 70°C (32 to 158°F) 90% RH non-condensing

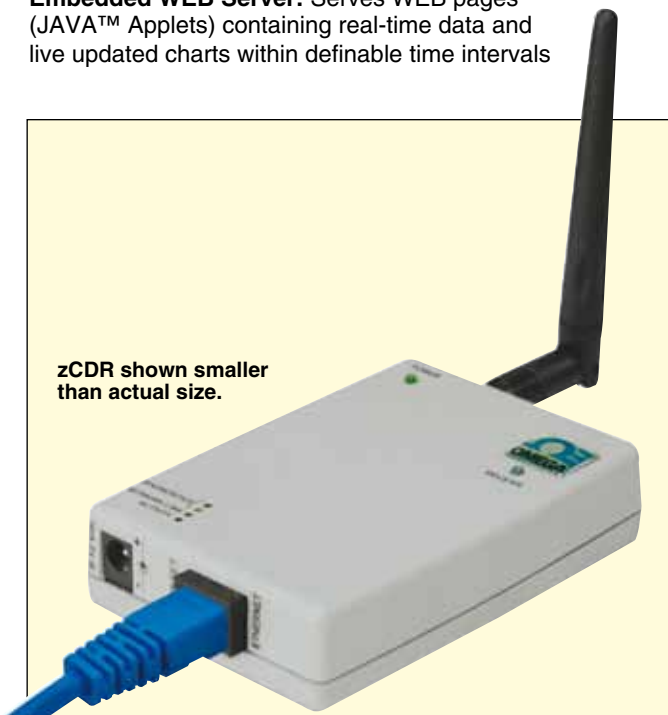
**Storage Temperature:** -40 to 125°C (-40 to 257°F)

**Packaging:** See diagrams on next page

#### General

**Agency Approval:** FCC Part 15C; CE EMC; 2004/108/EC, LVD 2006/95/EC, RTT&E 1999/5/EC, SRRC

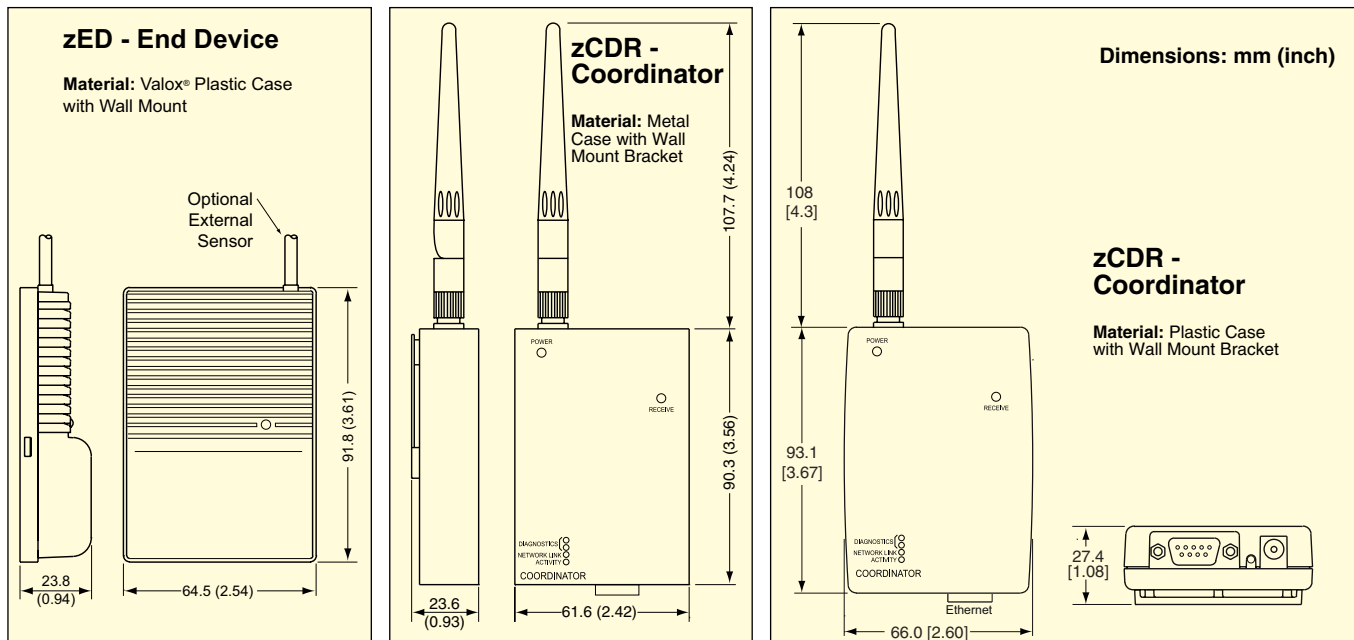
**Software:** iConnect (configuration software for the Ethernet interface), iLog (Excel-based software for automatic data logging), and Mail Notifier (email alarm notification software)



zCDR shown smaller than actual size.



Safety qualified universal AC power adaptor included with zCDR coordinator.



**A complete wireless system requires at least: 1 end device (zED-x, zED-x-P, zED-x-LCD, zED-x-DC, or zED-x-CELL) and 1 coordinator or meter/controller receiver (zCDR)**

To Order	
Model No.	Description
<b>zCDR</b>	Coordinator, which can support up to 32 end devices (any zED type except zED-VI)
<b>zED-T</b>	End device unit with internal temperature sensor
<b>zED-TH</b>	End device unit with internal temperature and humidity sensor
<b>zED-BT</b>	End device unit with internal barometric pressure and temperature sensor
<b>zED-BTH</b>	End device unit with internal barometric pressure, temperature and humidity sensor
Calibration	
<b>CAL-3-HU</b>	NIST-traceable calibration certificate; 3 humidity points: 25%, 50%, 75%, one temperature point: 25°C (for new units)
<b>CAL-3-HU-P-T</b>	NIST-traceable calibration certificate; 3 humidity, barometric pressure, and temperature points (for new units)
<b>CAL-3-P</b>	NIST-traceable calibration certificate; 3 barometric pressure points, temperature 25°C (for new units)
<b>CAL-3-T</b>	NIST-traceable calibration certificate; 3 temperature points (for new units)
<b>CT485B-CAL-KIT</b>	Calibration kit, 33% and 75% RH standards

**Note:** Because of transmission frequency regulations, these products may only be used in the US, Canada, Europe and China. Other sensor combinations available, contact our Sales Department for more information. Comes complete with software and operator's manual. For MIL Spec cable add suffix **"-ET"**.