The new NEWPORT® 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 1.5 volt alkaline batteries (included) that are inexpensive and widely available.

The End Devices transmit up to 300 feet (without obstructions or interferences) 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 NEWPORT 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.

NEWPORT offers a selection of End Devices for a variety of applications. Each End Device supports one or two sensors. End Devices are available with built-in sensors, with external sensor probes, and with both built-in and external sensors.
The external sensors are designed for harsh environments such as outdoor weather, in HVAC ducts, in freezers and refrigerators. For example, you can select one End Device that has one internal and one external sensor to monitor temperature and humidity both inside and outside a climate-controlled facility.

Each Coordinator can directly support up to thirty-two (32) End Devices. The Newport wireless Coordinators include AC adapters to operate on any voltage worldwide from 100 to 240 Vac and 50/60Hz. The zSeries Coordinator connects directly to an Ethernet Network or the Internet. Unlike an RS232 or USB device, it does not require a host computer.

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 cell phones. The Newport “Mail Notifier” software is a free and easy program for this application.

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

The NEWPORT 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. NEWPORT 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 NEWPORT 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).

NEWPORT offers an OPC Server software ($295) 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)

TEMPERATURE
Accuracy/Range*:
zED-T (internal sensor)
±0.5°C for 10°C to 55°C (±0.9°F for 50°F to 131°F)
±1°C for -18°C to 10°C (±1.8°F for -0.4°F to 50°F)
-TP1, -TP2 (external sensor)
±0.5°C for 10°C to 85°C (±0.9°F for 50°F to 185°F)
±1°C for -40°C to 10°C and 85°C to 125°C
(±1.8°F for -40°F to 50°F and 185°F to 257°F)

Accuracy/Range*:
zED-BTH, zED-TH (internal sensor)
±0.5°C for 0°C to 45°C (±0.9°F for 32°F to 113°F)
±1°C for -18°C to 0°C and 45°C to 55°C
(±1.8°F for -0.4°F to 32°F and 113°F to 131°F)

-THP (external sensor)
±0.5°C for 5°C to 45°C (±0.9°F for 41°F to 113°F)
up to ±1°C for -40°C to 5°C and 45°C to 124°C
(up to ±2.7°F for -40°F to 41°F and 113°F to 255°F)

RELATIVE HUMIDITY
Accuracy/Range:
zED-BTH, zED-TH, -THP
Refer to Chart

Accuracy/Range*:
**zED-BT (internal sensor)**
±0.8ºC @ 20ºC (-1.5ºF @ 68ºF)
±2ºC for -18º to 55ºC (±3.6ºF for -0.4º to 131ºF)
**BTP (external sensor)**
±0.8ºC @ 20ºC (-1.5ºF @ 68ºF)
±2ºC for -40º to 85ºC (±3.6ºF for -40º to 185 ºF)
*Note: extended temperature ranges are for External Probes only, the End Device’s operating temperature is -18 to 55ºC (-0.4 to 131ºF)

Resolution: 0.1ºC
Repeatability: ±0.1ºC, for zED-BTH, zED-TH, -THP

**BAROMETRIC PRESSURE**
**Accuracy/Range:**
**zED-BTH, zED-TH, -BTP**
±2 mbar for 10 mbar to 1100 mbar
(1 KPa to 110 KPa)
Resolution: 0.1 mbar

**EXTERNAL PROBE SPECIFICATIONS (zED)**
**Industrial Probe:**
SS housing, 137mm x Ø16mm (5" x Ø 0.63") for zED-xx-BTP, zED-xx-THP
**Stick Probe:**
ABS tubing, 152.4 mm x Ø6.35 mm (6" x Ø 0.25") for zED-xx-TP1
**Lug Mounted Probe:**
Copper tubing, 53.4 mm x Ø 7.92mm (2.1" x Ø 0.312"); mounting hole Ø 4.72mm (Ø 0.186") for zED-xx-TP2
**Cable:**
3 m (10’) long x Ø 5.72mm (0.225")
**Standard Cable Operating Temp:** -40º to 125ºC (-40º to 257°F) for zED-xx-TP1, -TP2, -THP;
-55º to 105ºC (-67º to 221°F) for zED-xx-BTP
**Optional MIL Spec Cable (-ET):** Ø 2.62mm (0.103") -80º to 160ºC (-112º to 320 ºF)

**INTERFACE SPECIFICATIONS (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 (Fig.1)
**Embedded WEB Server:** Serves WEB pages ( JAVA™ Applets) containing real-time data (Fig. 2) and live updated charts within definable time intervals (Fig. 3).

**POWER (zCDR)**
**Power Input:** 9 to 12 Vdc
**Consumption:** 2.5 W max
**Safety Qualified ac Power Adapter (included)**
**Nominal Output:** 9 Vdc @ 0.5 A
**Input:** 100 to 240 Vac, 50/60 Hz
**Power Adapter Operating Temp:** 0º to 40ºC (32º to 104ºF)

**POWER (zED)**
**Alkaline Battery:** two 1.5 Vdc, supplied
**Lifetime:** Estimate of 2 years with frequency of 1 reading per 2 minutes

**WIRELESS COMMUNICATION**
**Standard:** IEEE 802.15.4, DSSS
**Frequency:** 2.4 GHz (2400 - 2483.5 MHz), 16 channels
**Network Topology:** Star Topology
**Range:** Up to 91 m (300 ft) without obstructions or interference

**ENVIRONMENT**
**Operating Temperature (zED):** -18º to 55ºC (-0.4º to 131ºF), 90% RH non-condensing
Operating Temperature (zCDR): 0º to 70ºC (32º to 158ºF), 90% RH non-condensing
Storage Temperature: -40º to 125ºC (-40º to 257ºF)
Packaging: See mechanical section

GENERAL
Approvals:
FCC: Part 15C.

Software:
The software packages available for the zSeries wireless system are iConnect (configuration software for the Ethernet interface), iLog (Excel-based software for automatic data logging Fig. 4 and Fig. 5), and Mail Notifier (email alarm notification software).

zSeries Web Server - Screen Shots

Fig. 1 - Sensor configuration through embedded WEB server
Fig. 2 - WEB page displaying data received from the sensor

Fig. 3 - WEB page displaying the graph of the received data

Fig. 4 - iLOG Excel program logging the data sent by the zSeries
Fig. 5 – iLOG Excel program sketching the data sent by the zSeries

Mechanical Dimensions - Coordinator and Compact End Device

DOWNLOAD CAD FILES
A WEB FORMAT    AUTOCAST 2000
zCDR             zCDR
zED              zED
Compact zED End Device
Material: Valox Plastic Case with Wall Mount
**Replacement Probes and Calibration Certificates**

No need to take your unit out of service to get re-calibrated, order a calibrated probe instead.

Get a NIST Traceable Calibration Certificate with your Calibrated Replacement Probe. A complete wireless system requires one Coordinator (zCDR) and at least one (1) End Device (zED-*) Compact Commercial enclosure or High-Power NEMA 4 type (zED-*-P, zED-*-LCD, zED-*-CCELL).

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>zED-T</td>
<td>End device unit with internal temperature sensor</td>
</tr>
<tr>
<td>zED-T-TP1</td>
<td>End device unit with internal temperature sensor and external temperature sensor with stick probe</td>
</tr>
<tr>
<td>zED-T-TP2</td>
<td>End device unit with internal temperature sensor and external temperature sensor with lug mount probe</td>
</tr>
<tr>
<td>zED-TH</td>
<td>End device unit with internal temperature and humidity sensor</td>
</tr>
<tr>
<td>zED-TH-THP</td>
<td>End device unit with internal and external temperature and humidity sensor</td>
</tr>
<tr>
<td>zED-THP</td>
<td>End device unit with external temperature and humidity sensor</td>
</tr>
<tr>
<td>zED-BTH</td>
<td>End device unit with internal barometric pressure and temperature sensor</td>
</tr>
<tr>
<td>zED-BTHP</td>
<td>End device unit with internal barometric pressure, temperature and humidity sensor</td>
</tr>
<tr>
<td>zED-BT-BTP</td>
<td>End device unit with internal barometric pressure and temperature sensor and external barometric pressure and temperature sensor industrial probe</td>
</tr>
<tr>
<td>zED-TP1-P</td>
<td>Wireless temperature sensor with stick probe</td>
</tr>
<tr>
<td>zED-TP2-P</td>
<td>Wireless temperature sensor with lug mount probe</td>
</tr>
<tr>
<td>zED-THP-P</td>
<td>Wireless temperature and humidity sensor</td>
</tr>
<tr>
<td>zED-BTHP-P</td>
<td>Wireless barometric pressure, temp and humidity sensor</td>
</tr>
<tr>
<td>Model</td>
<td>Description</td>
</tr>
<tr>
<td>--------</td>
<td>-------------</td>
</tr>
<tr>
<td>zED-BTP-P</td>
<td>Wireless barometric pressure and temperature sensor</td>
</tr>
<tr>
<td>zED-TC-P</td>
<td>Wireless Dual thermocouple input</td>
</tr>
<tr>
<td>zED-VI-P</td>
<td>Wireless Analog input</td>
</tr>
<tr>
<td>zED-TP1-LCD</td>
<td>Temperature sensor with stick probe</td>
</tr>
<tr>
<td>zED-TP2-LCD</td>
<td>Temperature sensor with lug mount</td>
</tr>
<tr>
<td>zED-TP1-LCD-AA</td>
<td>Temperature sensor with stick probe, two AA alkaline batteries</td>
</tr>
<tr>
<td>zED-TP2-LCD-AA</td>
<td>Temperature sensor with lug mount, two AA alkaline batteries</td>
</tr>
<tr>
<td>zED-TP1-CCELL</td>
<td>Temperature sensor with stick probe, two C-cell alkaline batteries</td>
</tr>
<tr>
<td>zED-TP2-CCELL</td>
<td>Temperature sensor with lug mount probe, two C-cell alkaline batteries</td>
</tr>
<tr>
<td>zED-THP2-LCD-AA-H</td>
<td>Temperature and humidity sensor, two AA alkaline batteries, with LCD display</td>
</tr>
<tr>
<td>zED-THP2-CCELL-H</td>
<td>Temperature and humidity sensor, two C-cell alkaline batteries</td>
</tr>
<tr>
<td>zCDR</td>
<td>Coordinator, which can support up to 32 analog input end devices</td>
</tr>
<tr>
<td>zCDR-VI</td>
<td>Coordinator, which can support up to 32 analog input end devices</td>
</tr>
<tr>
<td>wi822-ZT</td>
<td>Meter/controller, supports up to 8 temperature end devices, with two solid state relays (SSR): 0.5A @ 120/240Vac continuous</td>
</tr>
<tr>
<td>wi833-ZT</td>
<td>Meter/controller, supports up to 8 temperature end devices, with two relays: form &quot;C&quot; SPDT 3A @ 120Vac, 3A @ 240Vac</td>
</tr>
<tr>
<td>wi844-ZT</td>
<td>Meter/controller, supports up to 8 temperature end devices, with two pulsed 10 Vdc @ 20mA (for use with external SSR)</td>
</tr>
<tr>
<td>wiDR33-ZT</td>
<td>DIN rail monitor/controller, supports up to 8 temperature end devices, with two relays: form &quot;C&quot; SPDT 3A @ 120Vac, 3A @ 240Vac</td>
</tr>
<tr>
<td>wiDR44-ZT-DC</td>
<td>DIN rail monitor/controller, supports up to 8 temperature end devices with 2 pulsed 10 Vdc @ 20 mA (for use with external SSR). Low voltage power option: 12 to 36Vdc or 24Vac.</td>
</tr>
</tbody>
</table>