High Power Wireless Transmitters

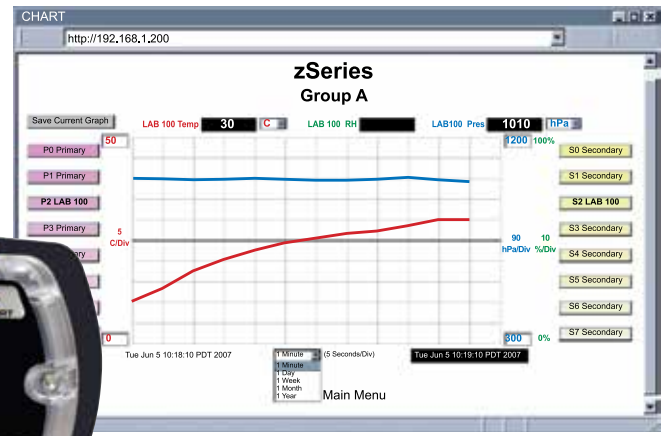
Ethernet or internet Connection

NEW

Display Models

zED-TP1-LCD
Shown smaller
than actual size.

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



Models Available for:

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

zED Series

1 YEAR WARRANTY · NIST · CE · !

Optional†

- Web Server
- Alarms by Email or Text Message
- No Special Software Required
- High Power
- NEMA 4 (IP65) Enclosure
- Low Power Option

The rugged high-performance, high power NEWPORT® **zSeries** wireless sensor/transmitter system provides Web-based monitoring of Analog Voltage and Current, Temperature, Humidity, and Barometric Pressure.

The radio is a high power IEEE 802.15.4 compliant transmitter operating at 2.4 GHz designed to transmit over greater distances and through more obstructions than the standard transmitter.

These wireless sensors transmit 1000 m (3280')—without obstructions or interferences—to a zCDR coordinator or wi8/wiDR meter-controller. The coordinators and controllers connect directly to an Ethernet network and the Internet and serve active Web Pages to display and chart the data.

You can monitor and record analog voltage and current, temperature, relative humidity, and barometric pressure over an Ethernet network or the Internet without any special software—just your Web Browser.

These zSeries wireless sensors are designed for demanding industrial applications indoors and harsh outdoor environments. The electronics are protected in a rugged weatherproof polycarbonate NEMA 4 (IP65) rated housing. The rugged industrial sensors are supplied with 3 m (10') of cable.

† Refer to page 4 for NIST calibration ordering information.

External Probes

Temperature/humidity or barometric pressure/ temperature probe included with zED-THP-P.

Lug mount probe included with zED-TP2-P.

Stick probe included with zED-TP1-P.

Meter-Controller/Coordinator

zCDR shown smaller than actual size. For more information, visit newportus.com

wi833-ZT meter controller/ coordinator shown smaller than actual size. For more information, visit newportus.com

Wireless Transmitters
Wireless transmitters are available with external probes appropriate for an almost unlimited variety of industrial and commercial applications.

Newport offers a selection of end devices for a variety of applications. The high power end device supports one external sensor. The external sensors are designed for harsh environments such as outdoor weather, in HVAC ducts, in freezers and refrigerators.

The high power End Devices run on either AC power, low voltage power, or batteries. The AC version (zED-P, zED-LCD) is powered by a 5 Vdc universal AC power adapter that operates on any voltage worldwide (110 to 240 Vac). Should AC power fail, the unit can operate on a 3.6V ultra-long-life lithium back-up battery (included).

A low power option (zED-DC) operates at 10 to 30 Vdc, or 24 Vac.

A completely wireless End Devices are powered by two AA (zED-LCD-AA) or two C-cell (zED-CCELL) alkaline batteries. These End Devices can operate for weeks, months, or years before changing the batteries. Battery life depends on the type of sensor and other user settings such as the frequency of transmission.

Alarm and Email
The zSeries wireless sensor system 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 and PDAs.

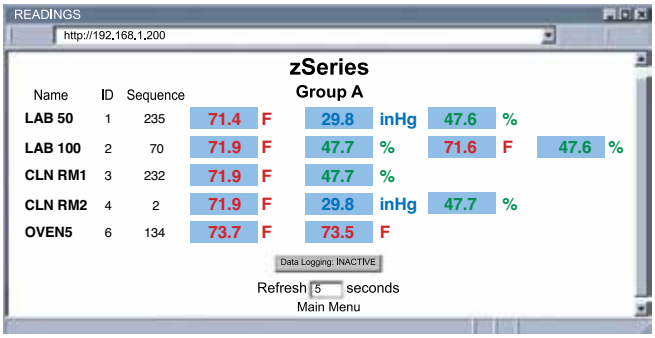
The Newport “MailNotifier” software is a free and easy program for this application. The meter-controller connects directly to an Ethernet Network or the Internet. Unlike an RS232 or USB device, it does not require a host computer.

Embedded Web Server
The 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.

Charts and Graphs
The zSeries system serves Active Web Pages to display real time readings and charts of Analog Voltage and Current, 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 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 (-40 to 257°F), and 0 to 100% RH] or within any narrow range such as [20 to 30°C (68 to 86°F)].

Newport 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.



Sensor Specifications
Relative Humidity
Accuracy/Range (zED-THP-x, zED-BTHP-x):
±2% for 10 to 90%;
±3% for 5 to 10% and 90 to 95%;
±4% for 0 to 5%
and 95 to 100%

Hysteresis: ±1% RH

Non-Linearity: ±3%

Repeatability: ±0.1%

Resolution: 0.1%

Temperature
Accuracy/Range

zED-TP1-x, zED-TP2-x:
±0.5°C for 10 to 85°C (±0.9°F for 50 to 185°F);
±1°C for -40 to 10°C and 85 to 125°C
(±1.8°F for -40 to 50°F and 185 to 257°F)

zED-THP-x, zED-THP2-x:
±0.5°C for 5 to 45°C (±0.9°F for 41 to 113°F);
up to ±1.5°C for -40 to 5°C and 45 to 124°C
(up to ±2.7°F for -40 to 41°F and 113 to 255°F)

zED-BTHP-x:
±0.5°C for 5 to 45°C (±0.9°F for 41 to 113°F);
up to ±1.5°C for -40 to 5°C and 45 to 85°C
(up to ±2.7°F for -40 to 41°F and 113 to 185°F)

zED-BTP-x:
±0.8°C @ 20°C (±1.5°F @ 68°F);
±2°C for 40 to 85°C (±3.6°F for -40 to 185°F)

Repeatability: ±0.1°C for zED-THP-x, zED-BTHP-x

Resolution: 0.1°C

Barometric Pressure
Accuracy/Range (zED-BTP-x, zED-BTHP-x):
±2 mbar for 10 mbar to 1100 mbar (1 KPa to 110 KPa)

Resolution: 0.1 mbar

Probe Specifications
Industrial Probe

zED-BTP-x, -BTHP-x, zED-THP-x:
SS 316 housing, 137 x Ø16 mm (5 x Ø0.63");
zED-THP2-x: SS 316 housing, 78 x Ø16 mm (3.1 x Ø63");

Stick Probe (zED-TP1-x):
ABS tubing, 152.4 x Ø6.35 mm (6 x Ø0.25")

Lug Mounted Probe (zED-TP2-x):
Copper tubing, 53.4 x Ø7.92 mm (2.1 x Ø0.312");
mounting hole Ø4.72 mm (Ø0.186")

Cable:

zED-TP1-x, -TP2-x, zED-THP-x:
3 m (10') L x Ø2.62 mm (0.103");
-80 to 200°C (-112 to 392°F)

zED-BTP-x, -BTHP-x:
3 m (10') L x Ø4.45 mm (0.175");
-55 to 105°C (-67 to 221°F)

ø = diameter

Thermocouple Input

Temperature Accuracy/Range:
Refer to T/C chart, on next page
Temperature Stability: 0.08°C/°C
Temperature Coefficient: ±25 ppm/°C
Thermocouple Cold End Tracking: 0.1°C/°C
Thermocouple Lead Resistance: 100 Ω maximum
Thermocouple Type (ITS 90):
J, K, T, E, R, S, B, C, N, L (DIN J)
Warm-Up to Rated Accuracy: 30 minutes

Analog Input

Voltage Input: Differential; bipolar; ±100 mV, ±1V, ±10V
Input Impedance: 400 kΩ for voltage
Current Input: Differential; bipolar; ±20 mA (5 Ω load)
Accuracy: ±1% full range @ 25°C
Reading Rate: Periodic (1 sample/update) or continuous (20 samples/second)
A/D Conversion: Sigma-Delta
Resolution: 16-bits
Temperature Coefficient: ±50 ppm/°C
Common Mode Rejection: 105 dB
Normal Mode Rejection: 98 dB
Warm-Up to Rated Accuracy: 30 minutes

Wireless Communication

Standard: IEEE 802.15.4, DSSS
Frequency: 2.4 GHz (2400 to 2483.5 MHz), 16 channels
Network Topology: Star topology
Range: Up to 1000 m (3280') without obstructions or interference

Power

zED-x-P, zED-x-LCD:
- **Power Input:** 5 Vdc
- **Consumption:** 0.8 W max

Safety Qualified AC Power Adaptor (Included):
- **Nominal Output:** 5 Vdc @ 0.6 A
- **Input:** 100 to 240 Vac, 50/60 Hz
- **Operating Temperature:** 0 to 40°C (32 to 104°F)

Lithium Back-up Battery: One 3.6 Vdc (included)
- **Lifetime:** Estimate of 2 years with frequency of 1 reading per 2 minutes (7 months with -TC option, 8 months for -VI option)

zED-x-DC-H2:
- **Power Input:** 10 to 30 Vdc, or 24 Vac ±10%
- **Consumption:** 1.5 W max
- **Isolation Dielectric per 60 sec:** 1000 Vdc

zED-x-CCELL:
- **Alkaline Battery:** Two C-cell 1.5 Vdc (included)
- **Lifetime:** Estimate of 5 years with frequency of 1 reading per 2 minutes

Environmental

Operating Temperature:
- **zED-x-P, zED-x-DC-H2:** -20 to 70°C (-4 to 158°F), 90% RH non-condensing
- **zED-x-CCELL:** -18 to 55°C (-0.4 to 131°F), 90% RH non-condensing
- **zED-x-LCD-x:** -10 to 60°C (14 to 140°F), 90% RH non-condensing

Packaging

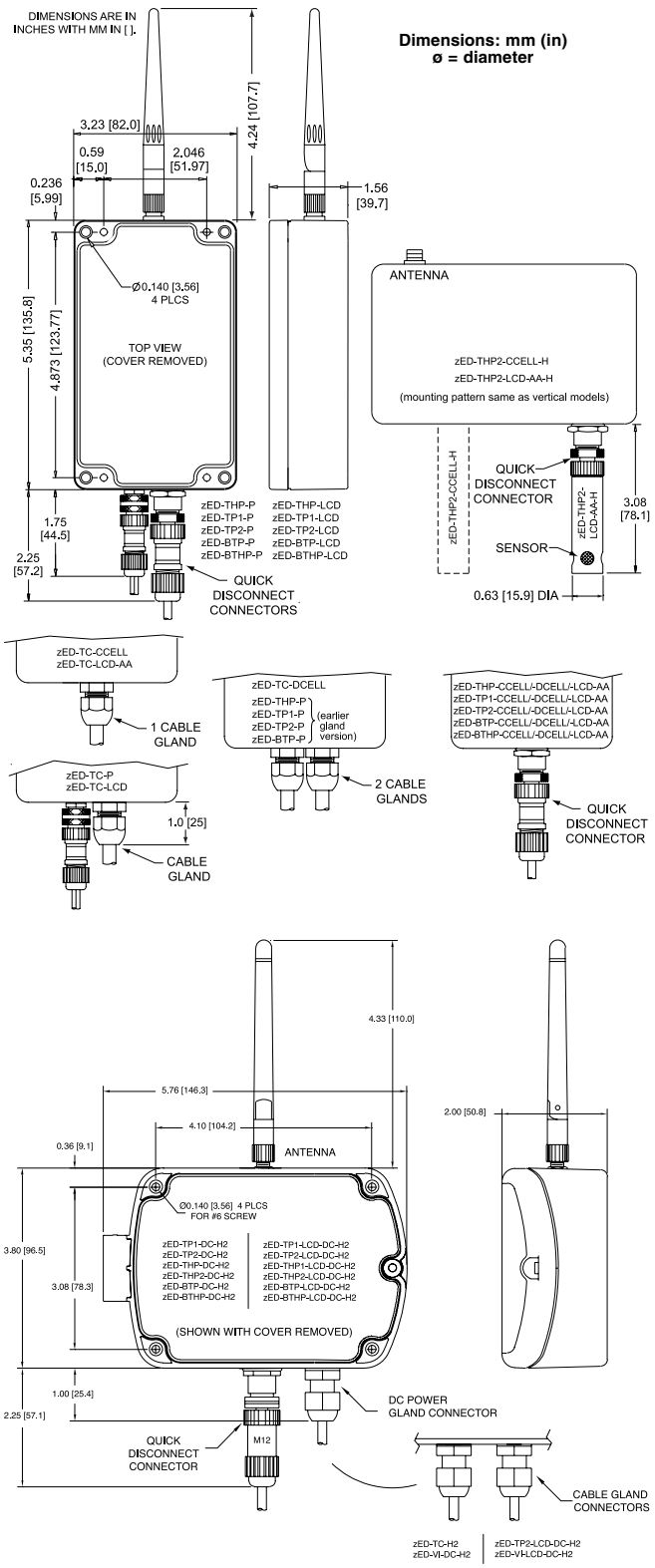
Enclosure Material: Polycarbonate
Enclosure Protection: NEMA 4 (IP65)
Enclosure Dimensions:
135.9 L x 82 W x 39 mm D (5.35 x 3.23 x 1.56")

General

Agency Approval: FCC Part 15C; CE EMC; 2004/108/EC, LVD 2006/95/EC,RTT&E 1999/5/EC
Software: iConnect (configuration software for the Ethernet interface), iLog (Excel-based software for automatic data logging), and Mail Notifier (email alarm notification software)

Safety Qualified Universal AC Power Adapter is included with all AC powered models.

Mechanical



Thermocouple Chart			
Input type		Range	Accuracy
J	Iron - Constantan	-210 to 760°C / -346 to 1400°F	0.4°C / 0.7°F
K	CHROMEGA®- ALOMEGA®	-270 to -160°C / -160 to 1372°C (-454 to -256°F / -256 to 2502°F)	1.0°C / 0.4°C (1.8°F / 0.7°F)
T	Copper - Constantan	-270 to -190°C / -190 to 400°C (-454 to -310°F / -310 to 752°F)	1.0°C / 0.4°C (1.8°F / 0.7°F)
E	CHROMEGA® - Constantan	-270 to -220°C / -220 to 1000°C (-454 to -364°F / -364 to 1832°F)	1.0°C / 0.4°C (1.8°F / 0.7°F)
R	Pt / 13%Rh-Pt	-50 to 40°C / 40 to 1768°C (-58 to 104°F / 104 to 3214°F)	1.0°C / 0.5°C (1.8°F / 0.9°F)
S	Pt / 10%Rh-Pt	-50 to 100°C / 100 to 1768°C (-58 to 212°F / 212 to 3214°F)	1.0°C / 0.5°C (1.8°F / 0.9°F)
B	30%Rh-Pt / 6%Rh-Pt	100 to 640°C / 640 to 1820°C (212 to 1184°F / 1184 to 3308°F)	1.0°C / 0.5°C (1.8°F / 0.9°F)
C	5%Re-W / 26%Re-W	0 to 2320°C / 32 to 4208°F	0.4°C / 0.7°F
N	Nicrosil - Nisil	-250 to -100°C / -100 to 1300°C (-418 to -148°F / -148 to 2372°F)	1.0°C / 0.4°C (1.8°F / 0.7°F)
L	J DIN	-200 to 900°C / -328 to 1652°F	0.4°C / 0.7°F

A complete wireless system requires at least: 1 end device zED-x-P, zED-x-LCD, or zED-x-CCELL (up to 8 end devices) and 1 coordinator or meter/controller (receiver) zCDR, wi8xx-ZT, or wiDRxx-ZT.

To Order *Visit newportUS.com/wiseries-zed-p for Pricing and Details*

Model No.	Description
zED-TP1-P	Temperature sensor with stick probe, AC powered
zED-THP-P	Temperature and humidity sensor, AC powered
zED-TC-P	Dual thermocouple input, AC powered
zED-TP2-LCD	Temperature sensor with lug mount probe, AC powered, LCD display
zED-THP-LCD	Temperature and humidity sensor, AC powered, LCD display
zED-TC-LCD	Dual thermocouple input, AC powered, LCD display
zED-VI-LCD	Analog input, AC powered, LCD display
zED-THP-CCELL	Temperature and humidity sensor, battery powered
zED-THP2-CCELL	Short probe with temp and humidity sensor, battery powered
zED-BTP-CCELL	Barometric pressure and temp sensor, battery powered
zED-BTHP-CCELL	Barometric pressure, temp and humidity sensor, battery powered
zED-TC-CCELL	Dual thermocouple input, battery powered
zED-THP-LCD-CCELL	Temperature and humidity sensor, battery powered, LCD display
zED-THP2-LCD-CCELL-H	Short probe with temp and humidity sensor, battery powered, LCD display, horizontal case
zED-TC-LCD-CCELL-H	Dual thermocouple input, battery powered, LCD display, horizontal case
zED-THP-DC-H2	Temperature and humidity sensor, low voltage powered, horizontal case
zED-TC-DC-H2	Dual thermocouple input, low voltage powered, horizontal case
zED-THP-LCD-DC-H2	Temperature and humidity sensor, low voltage powered, LCD display, horizontal case
zED-TC-LCD-DC-H2	Dual thermocouple input, low voltage powered, LCD display, horizontal case
zED-VI-LCD-DC-H2	Analog input, low voltage powered, LCD display, horizontal case
Wireless Coordinator and Meter Controller with Coordinator (Receivers)	
zCDR	Coordinator, which can support up to 32 end devices
zCDR-VI	Coordinator, which can support up to 32 analog input end devices
wi833-ZT	Meter/controller, which can support up to 8 temperature end devices, with 2 relays: Form “C” SPDT 3 A @ 120 Vac, 3 A @ 240 Vac, embedded Ethernet, 90 to 240 Vac, 50/60 Hz
wi853-ZT	Meter/controller, supports up to 8 temperature end devices, with analog output 0 to 10 Vdc or 0 to 20 mA @ 500 Ω max and Form “C” SPDT 3 A @ 120 Vac, 3 A @ 240 Vac, embedded Ethernet, 90 to 240 Vac, 50/60 Hz
wiDR22-ZT	DIN rail monitor/controller, supports up to 8 temperature end devices, with 2 solid state relays (SSRs): 0.5 A @ 120/240 Vac continuous, embedded Ethernet, 90 to 240 Vac, 50/60 Hz
wiDR44-ZT-DC	DIN rail monitor/controller, supports up to 8 temperature end devices, with 2 pulsed 10 Vdc @20 mA (for use with external SSR), embedded Ethernet, low power option 12 to 36 Vdc, 24 Vac
Calibration†	**Description**
CAL-3-HU	NIST traceable calibration certificate; three humidity points: 25%, 50%, 75%, and one temperature point of 25°C (for new units)
CAL-3-HU-P-T	NIST traceable calibration certificate; three humidity, barometric pressure, and temperature points (for new units)
CAL-3-P	NIST traceable calibration certificate; three barometric pressure points, and one temperature 25°C (for new units)
CT485B-CAL-KIT	Calibration kit, 33% and 75% RH standards

For the meter/controllers, other output options are available, please contact our Sales Department.
Comes complete with software, 2 C-cell batteries, or AC power adaptor, and operator’s manual.
Ordering Example: *Two* ***zED-TP2-P*** *high power end devices with external temperature sensor in lug mounting probe housing and 3 m (10') cable, and* ***zCDR,*** *coordinator.*
CAL-3-HU, *NIST traceable calibration certificate for new unit.*
Note: *2 type K thermocouples with 1m of 24 AWG PFA insulated wire stripped lead termination included with -TC models.*

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