



# Cellular Edition

TM-CELL400-Z

User Guide

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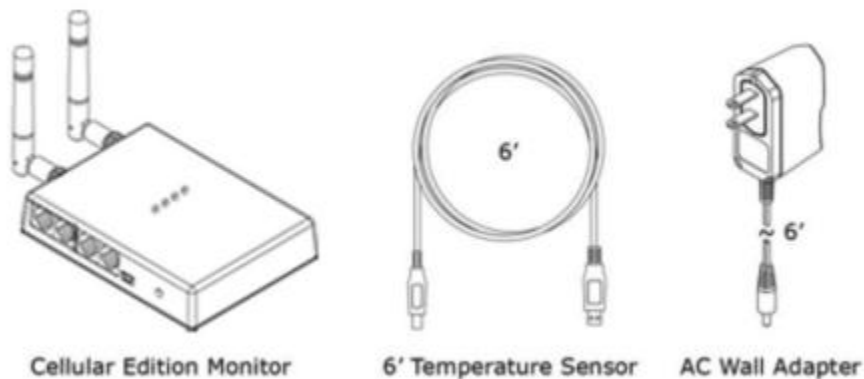
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## Hardware Guide

### Cellular Edition At a Glance

The Temperature@lert Cellular Edition is a remote environmental monitor that measures conditions such as temperature and humidity at its location every few minutes. Each sensor reading is transmitted via the mobile phone network to our 24/7 monitoring system and secure web site. If the temperature goes too high or too low, the system will call, email or text message you. The Cellular Edition can use either wired sensors (connected directly to the unit) or ZPoint wireless sensors. Each Cellular unit can be linked to 15 ZPoint wireless sensors. Each ZPoint sensor has two additional jacks for external sensor additions. If the power ever goes out, the unit will continue to operate on the built-in battery backup. If the monitoring website ever fails to hear from the unit, you will receive an alert to check the device. Either way, we want you to know that we've got you covered. ***Temperature@lert Cellular Edition requires a monthly or annual monitoring plan for operation. If you purchased your unit from a reseller, you may need to call Temperature@lert at 866-524-3540 or email support@temperaturealert.com to subscribe to a plan.***

The Temperature@lert Cellular Edition includes the following items:



### Setting Up the Hardware

Simply connect the unit to any AC outlet to power on the device and the unit will begin operating. After ten seconds, temperature readings will automatically begin transmitting. The unit is operating correctly if you do NOT see the red failure light blink.

### Verifying Wireless Signal Reception

Your Temperature@lert Cellular Edition transmits temperature reading via the Verizon and Aeris(for

international) mobile phone networks. In order for the unit to operate, you **must be within range of either the cell carrier's** (or one of their roaming partners) **service area**. If you notice one or two blinks on the failure light it could be low signal. Please try signal strength mode to find a better location. Please contact support if this does not help.

## Setting Up Your First Alert

Temperature@lert Cellular Edition is primarily controlled via the Sensor Cloud website located at [www.myalertlist.com](http://www.myalertlist.com). Log into [www.myalertlist.com](http://www.myalertlist.com) using the username and password you created when you purchased the device. To setup a temperature alert notification, follow these steps:

1. Click on the Devices tab and select Device List.
2. In the Device List table, click on the alert link for your device.
3. Click add Sensor Alert.
4. Enter a name for the alert.
5. Choose Temperature for the condition.
6. Set the alert for above or below the temperature reading.
7. Enter the temperature threshold in degrees that will trip the alert.
8. Click the Add Action link.
9. Select Email, Phone, or SMS and enter the email or phone number.
10. Click the Send on Clear Also box to be notified when the temperature comes back in range.
11. Click the Save button.

***Please read our sensor cloud manual or knowledge base for more detail on Sensor Cloud and alerts.***

## Temperature@lert Cellular Edition in Detail

### Indicator Lights

The unit has 4 indicator lights: Status, Battery, Info and Failure(see table).

# zpoint cellular edition

quick start guide

LED Reference				
LED	1 Blinks	2 Blinks	3 Blinks	Fast Blinking
<b>Status</b>	Last transmission successful	Last transmission successful, but low signal	Attempting to transmit node reading	Attempting to transmit local reading
<b>Power</b>	Charging from External power	Low Battery		
<b>Info</b>	No sensor	ZPoint Nodes connected	Battery too low to use Modem	
<b>Failure</b>	Failed to communicate with server	No signal	Device not registered	Modem Error

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## Cellular Edition Jacks and Connectors

On the side of the unit, you'll find the majority of the connectors and jacks (see figure 2):

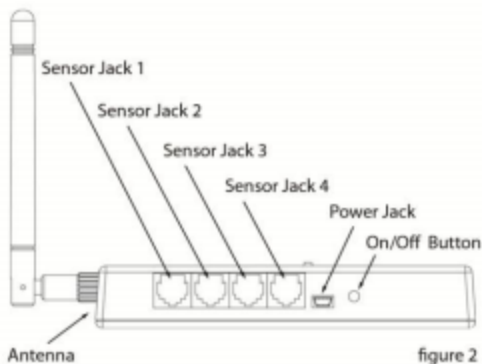
**Large Antenna** – The GSM or CDMA swivel antenna is connected via a threaded SMA mount. Used to connect to the cellular network.

**Small Antenna** – This swivel antenna is connected via a threaded SMA mount and is used to communicate to the Zpoint wireless nodes.

**Power** – This jack accepts the DC power output from the wall transformer.

**Power Switch** – This switch is used to control the different operating modes of the device (See operating modes).

**RJ 12 Sensor Jacks 1, 2, 3 & 4** – The sensor jacks accept Temperature@lert environmental sensors. The unit will monitor up to four sensors.



## Charging the Battery

While the unit is connected to wall power, the battery charge is automatically maintained. When the battery is charging the battery light will flash once every few seconds. The battery light will continue to flash while the unit is connected to wall power.

## Battery Life

When disconnected from external power the battery is expected to last between one to two days. Lower reading intervals will lower battery life. It's recommend to set power alerts for AC power loss and low battery.

## Turning on the Device

Connecting a unit that has been powered off to wall power will turn on the unit. Alternatively, a ball point pen or paper clip can be used to press and immediately release the On/Off button. All lights will briefly light up and the unit will be turned on.

## Turning off the Device

The unit is shipped in the Off mode. To power off the device manually, use a ball point pen or paper clip to press AND HOLD the On/Off button for 10 seconds. You will see all lights turn on and the status light will flash. When the lights start going off in order one by one, you can release the On/Off button. The unit is now powered off. While fully powered off, the unit will not send or record any temperature readings at any time. All indicator lights will be off. Turning off the device is recommended when not in use for extended periods of time to preserve battery life. Pausing your account **does not** power off a device.

## Signal Strength Indicator Mode

Use this mode to determine the wireless cellular signal strength where the device is installed.

To Enter Signal Strength Mode:

1. Press and hold the "on/off" button. All the lights will illuminate and after about 5 seconds the "status" light will start flashing. When the "status" light begins flashing release the "on/off" button. (Hold the button too long and the device will power off)
2. The "status" light will remain solid while the device searches for a cellular tower. If the device finds a cellular tower, the lights will illuminate from bottom to top displaying the relative signal strength. For example if the "failure" light is illuminated, the device is indicating it has about 25% signal strength, if all four light are illuminated the device has 100% signal strength. A blinking light indicates half a "bar" of signal strength. If the "status" light remains solid, and none of the other lights illuminate, the device is indicating it can't find a cellular tower.
3. After about three minutes, the device will automatically exit signal strength mode and resume its normal transmissions.

Here's a short video we put together displaying the procedure:

<http://www.youtube.com/watch?v=b3UhVPN4EGg>

## **Operating Guidelines**

### **Placement**

The unit should be placed indoors on a flat and level surface. The unit can be mounted vertically on a wall or other surface with screws or with industrial Velcro® tape.

### **Adding ZPoint Wireless Sensors**

When you order your ZPoint wireless sensors from Temperature@lert, we will automatically associate them with your account. The ZPoint wireless sensor will automatically find in range. If your ZPoint wireless sensor is not showing up on Sensor Cloud, please try signal strength mode then contact support.

### **Wireless Reception**

The unit requires a cellular wireless signal in order to operate. If a signal is unavailable in the desired installation area, the sensor cable can be increased to a length of up to 200 feet (61 meters). ZPoint wireless sensors can be up to 1,000 feet (line of sight) from the Cellular Edition, or 300-400 feet with obstructions. You can use a standard RJ12 six conductor extension cable or contact Temperature@lert to purchase a longer cable. (Note, four conductor extension cables may not allow your device to operate properly.) Alternatively, an external Quad or Dual band GSM antenna with an SMA mount can be utilized. Note that antenna extension wire length degrades the signal as length increases. We do not recommend using an antenna cable over 6-feet (1.8 meters) in length. Please contact Temperature@lert support before connecting an antenna not supplied with the unit. Use of an incorrect antenna can place the device out of FCC compliance. The antenna should be oriented in a vertical position perpendicular to the horizon. The antenna must remain connected during operation. In order to disconnect the antenna, complete the full power down instructions first.

## **Device Care Instructions(For both Cellular Edition and Zpoint Wireless Nodes)**

### **Battery maintenance.**

Allowing the battery to fully discharge can shorten the devices lifespan. Even when not in use please do not leave the device disconnect from power for overly extended period of time. If you must store the device hold down the power button until all lights turn on then go out one by one. This will power off the device and preserve some of the charge.

## **Environment considerations.**

Device Operating Range: 5°C to +45°C (+41°F to +113°F)

If placing the device in a refrigerated environment it is highly recommend keeping in a sealed FDA bag with desiccant. Otherwise condensation and build and damage the device. Ideally the device should be placed outside the fridge or freezer environment and have a sensor probe on the inside. If operating in high humidity it is recommend to keep the device in a sealed enclosure such as Pelican case or NEMA enclosure.

## **Avoiding physical roughness.**

You should never have to force any connection to power or sensors. Using too much force can break the delicate connectors. Be careful not to over tighten the antenna connection. It should be snug but still be able to be loosened by hand. If placing the device high up makes sure it is securely mounted to prevent falling damage.

## **Troubleshooting**

### **Common Problems**

#### ***Failure Light is Flashing***

If there are two blinks then signal may be too low. Please try signal strength mode and move the device around until a better location is found. Any other blinking pattern, please contact support to resolve your issue.

#### ***Info Light is Flashing***

An info light does not always indicate a fault or failure. The device may still be transmitting successfully as long as the red failure light is not flashing.

One blink is no sensors plugged in. Double check that your sensor are connected securely.

Two blinks mean one or more Z-point wireless sensors are connected.

Three blinks means that the battery is too low for the modem to turn on. Please make sure the device is connected to a working power source and plugged in at least for an hour before contacting support.

## **Store and Forward**

Store and Forward is an optional feature available in certain Sensor Cloud monitoring plans. When

wireless communication is unavailable (for example if the ZPoint Cellular Edition is loses signal or a wireless sensor goes out of wireless range of the cellular edition), turning on store and forward will internally log the sensor readings on the regular interval. Once communication is restored, the logged data will be forwarded to the cloud and available for reporting and compliance purposes. Each node and gateway can store up to 5000 readings. Please make sure if it enabled on all your devices by clicking “View” for the particular device in the device list. If you wish to turn it on, please contact support to ensure you have a monitoring plan that supports it. \*Note: Store and Forward data transmitted to Sensor Cloud is not evaluated for alarms. Therefore, if you utilize this feature, you should setup a missed report alert to notify you that a node or other device has been unable to transmit.

## Zpoint Wireless Sensor

All information below here applies to the Zpoint Wireless Sensor(node).

### Setting Up the Hardware

Ensure the ZPoint Cellular Edition is powered on. Once the gateway is powered on, it will attempt to connect to the cloud. After a successful cloud connection is made, the ZPoint Cellular Edition will be accessible by the battery powered ZPoint wireless sensors.

To use a battery powered ZPoint wireless sensor, simply press and release the power button to turn on the unit. The device will turn on and begin searching for a ZPoint Cellular Edition within range and transmit a reading to the cloud. The unit is operating correctly if you do NOT see the red failure light blink.

### Verifying Wireless Signal Reception

Your Temperature@lert ZPoint wireless sensor transmit sensor readings via 2.4GHz radio waves to the ZPoint Cellular Edition. In order for the unit to operate, the nodes **must be within range of a ZPoint Cellular Edition**. Range is 1000ft line of sight. A variable 300ft with obstructions.

### Signal Strength Indicator Mode

This mode is used to find how strong the signal is between the Zpoint Wireless Sensor and the closest Cellular Edition(gateway).

To Enter Signal Strength Mode:



1. Press and hold the "on/off" button. All the lights will illuminate and after about 5 seconds the "status" light will start flashing. When the "status" light begins flashing release the "on/off" button. (Hold the button too long and the device will power off)

2. The "status" light will remain solid while the device searches for a gateway in range. If the device finds a gateway, the lights will illuminate from bottom to top displaying the relative signal strength. For example if the "failure" light is illuminated, the device is indicating it has about 30% signal strength, if all 3 light are illuminated the device has 100% signal strength. A blinking light indicates half a "bar" of signal strength. If the "status" light remains solid, and none of the other lights illuminate, the device is indicating it can't find a gateway.

3. After about three minutes, the device will automatically exit signal strength mode and resume its normal transmissions.

### Turning on the Wireless Sensor

A ball point pen or paper clip can be used to press and immediately release the On/Off button. All lights will briefly light up and the unit will be turned on.

### Turning off the Wireless Sensor

The unit is shipped in the Off mode. To power off the device manually, use a ball point pen or paper clip to press AND HOLD the On/Off button for 5 seconds. You will see all lights turn on and the status light will flash. When the lights start going off in order one by one, you can release the On/Off button.

The unit is now powered off. While fully powered off, the unit will not send or record any temperature readings any time. All indicator lights will be off. Pausing your account does not power off the device.

### Light Table

LED Reference Table				
LED	1 Blink	2 Blinks	3 Blinks	Fast Blinking
Status	Last transmission to Cellular Edition successful	Last transmission to Cellular Edition successful but low signal		Attempting to transmit to Cellular Edition
Information	No external sensor	Low battery		
Failure	Not registered on Sensor Cloud	No signal	Failed to communicate with wireless radio module	

### Battery Life

ZPoint wireless sensors will run up to 5 years on the two included Energizer Advanced Lithium AA batteries. The units can transmit as frequently as every 5 minutes and be in ambient temperatures down to -40°C without shortening the battery life. There are several things that will shorten the battery life:

- Sensor configurations that require the sensor to constantly remain powered such as rainfall and wind speed will reduce the battery life. Standard sensors such as temperature, humidity, flood, and dry contact **will not** reduce the battery life.

- ZPoint wireless sensors that are not within range of a ZPoint Cellular Edition for an extended period of time will experience a decrease in battery life. If you are using the wireless sensors in those conditions, make sure you have low battery alarms setup. ZPoint Wireless Repeaters operate on a built-in lithium-ion rechargeable battery. The repeater must remain connected to external AC power for operation, but will continue to operate on its built in battery for up to 24 hours in the event of a loss of external power.

## **Changing the Batteries**

The status of the batteries can be seen from the device view page on the Sensor Cloud website. In addition, you can setup a low battery alarm to notify you when the batteries are low on power. To change the batteries, turn the unit over and unscrew the cover. Remove the two AA batteries and replace them with the same type (2 Energizer Advanced Lithium AA Batteries). Standard alkaline cells can be used, but they will not perform well in cold conditions and will provide a shorter lifetime.

Wireless Repeaters operate on a built-in lithium-ion rechargeable battery that can't be removed.

**IMPORTANT:** *After you change the batteries, you will need to press and release the on/off button to turn the device back on.*

## **Troubleshooting**

### **Failure light blink/not reporting to cloud**

First make sure the Cellular Edition is powered on and communicating. If it is try bringing the device near the Cellular and pressing the On/Off button once to reboot. If it transmits after a few seconds then you can use signal strength mode to find the ideal placement for it.

### **All three lights turn on and then off without pressing anything.**

If you ever see this happen it could be the result of condensation on the board. If inside a freezer please remove the device to allow it to dry. This can be prevented by using a 100% sealed FDA bag with desiccant. If the device still has issue after drying please contact support.

### **No lights turn on**

The battery may have discharged. Try replacing them with 2AA batteries. Note\* The repeater has a soldered in battery that cannot be replaced. Please contact support.