![MONNIT]

Smart Monitoring Systems for Restaurants and Foodservice

Smart Monitoring Systems for Restaurants and Food Services

How restaurants, cafeterias and other food services can implement reliable, low-cost, monitoring solutions for smarter, safer, and more efficient operations.

Introduction

Head chef and restaurant owner, Anthony, is routinely the first to arrive in the morning and the last employee to leave after closing. He spends part of his days on the line in the kitchen assisting other cooks and making sure each plating is perfect. Anthony also spends time in the front of the house and his office communicating with guests and managing paperwork.

Wherever Anthony is, whether at work or home, he has access to important information about his restaurant. From his smartphone, he can see how many guests are in the restaurant, how the HVAC system is performing along with temperatures for both the kitchen and dining areas, temperatures of food coolers and freezers, and even which appliances are running and for how long. Anthony makes sure to check daily performance and numbers after a successful day to gain deeper insights into his restaurant. He also makes sure his staff remembered to shut down all of the appliances and the lights have been turned off. He can do all of this with one quick glance at his phone as he locks the door and heads home.

The Internet of Things (IoT):

The network of physical objects ("things") embedded with sensors, software, electronics, and network connectivity, which enables them to collect and exchange data.

Foodservice and the Internet of Things

The foodservice industry is growing rapidly and many restaurants are struggling to optimize their daily operations. The restaurant business is challenging, studies show that 60% of restaurants fail within the first three years. Any restaurant owner needs to maximize his/her resources if they want to stay ahead of the competition. Implementing low-cost IoT connected technology can play a major part in improving efficiency and increasing profits.

The basic idea of the IoT is to connect everyday objects to the internet and each other, allowing these "things" to communicate in new ways. One of the industries experiencing the biggest impact from IoT implementation is foodservice. Many restaurants, coffee shops, bars, etc. have started implementing an IoT strategy to meet food safety regulations and gain deeper insights on daily operations.

Here are a few of the struggles, concerns, and responsibilities a foodservice professional can overcome with Monnit and IoT technology:

- Reduce Waste and Spoilage
- Save Time and Resources
- Protect Your Investment
- Increase Food Safety
- Extend Food Shelf Life

- Conform with Regulatory Compliance
- Become Aware of Food Storage Problems
- Improve Guest Experience
- Protect Your Reputation
- Monitor From Anywhere

RETAIL FOOD LOSS AND WASTE

According to the United States Department of Agriculture, over 10% of all food waste in the U.S. comes from the retail sector. This equates to over 43 billion pounds of food wasted, costing over $46.7 billion annually. A large portion of retail level food loss and waste comes from; excessive or insufficient heat, inadequate storage, and storage technical malfunction.

10%
Of all food waste is at retail level
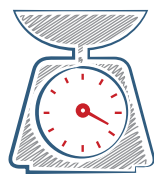
43B
Pounds of retail food is wasted every year

$46.7B
Dollars worth of retail food is wasted every year

Source: United States Department of Agriculture - Economic Research Service

Regulations

Food safety regulations are enforced at any organization where food is stored, displayed, prepared, or cooked. These rules ensure restaurants store, prepare and serve food safely to prevent patrons from becoming sick from pathogens like bacteria. The main preventative measure is usually temperature logs to monitor the daily environmental patterns in food storage areas. These are required to be accurately recorded at set time intervals and can be audited by health inspectors should an incident occur.

In the early 2000s, there was a lot of concern regarding foodborne illnesses which prompted the creation of a new act signed into law on January 4, 2011. The Food Safety Modernization Act updated existing legislation which had been in place since 1938, requiring preventive controls to address hazards that occur in the products foodservice companies manufacture. For many years, there have not been any requirements for tracking temperatures from farm to table. These inconsistencies lead to reduced food safety and a greater risk of foodborne illnesses effecting customers. The majority of foodborne illnesses are caused by inadequate sanitation procedures and poor temperature control when storing raw and cooked products.

Restaurant owners, managers, and franchisees are being more proactive by consistently recording the temperatures of ovens, freezers, and refrigerators to ensure food safety. Not only is it important to meet regulations, a business's reputation depends on customers trusting an establishment to serve quality food. If word gets out that deli meats, pastries, sushi, or tuna salad caused food poisoning, restaurants will lose customers and potentially their food permit as well. Monnit helps the foodservice industry remain in compliance with safety regulations to make sure everyone is serving safe, quality food.

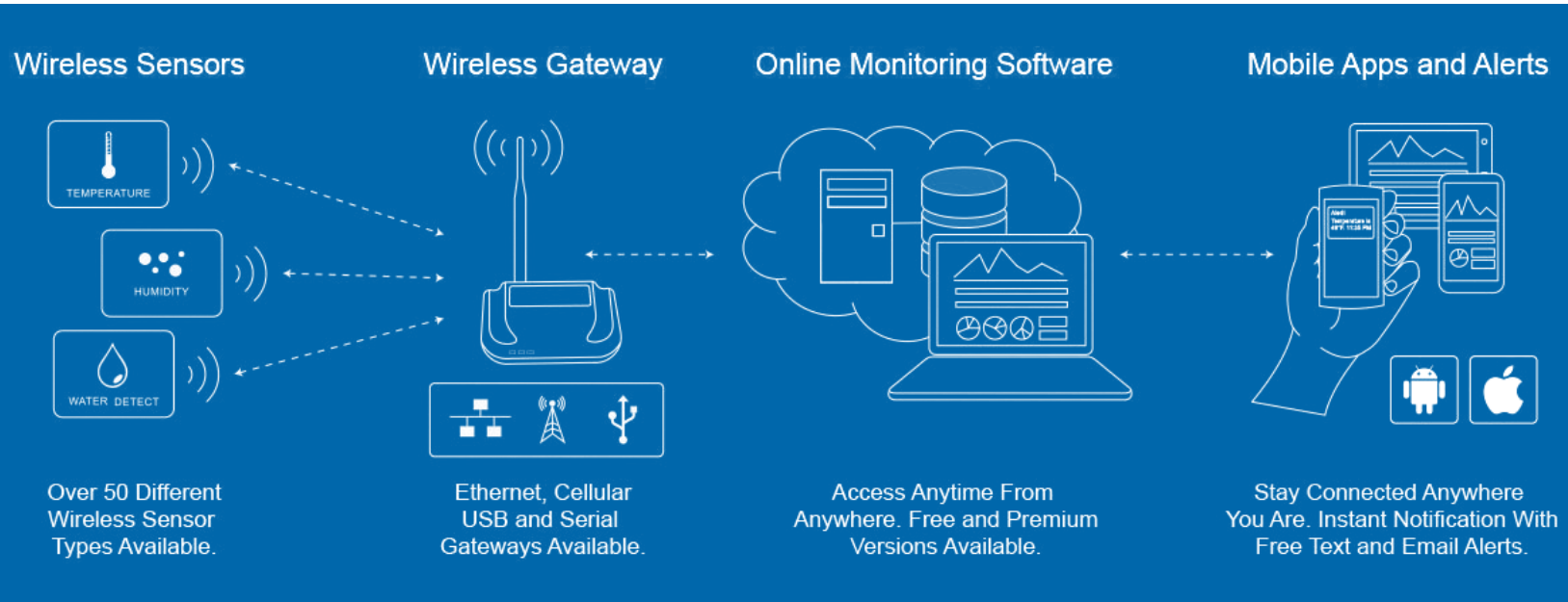## Out with the Clipboard, In with Monnit

Whether a part of a franchise or an independent restaurant, automated monitoring solutions can help managers and owners maintain a successful business. Monnit wireless sensors are used in thousands of restaurants today. These remote monitoring solutions help businesses track the status of environmental conditions in addition to complying with health department regulations.

In the United States, the FSMA requires detailed monitoring, record-keeping, and reporting on all food services. Most restaurants and food service providers still preform manual checks of the conditions in storage areas. These routine inspections require recording the temperature and/or humidity, which typically happens every three hours during the day. Monnit offers an alternative solution to the time-consuming, paper-based temperature/humidity recording process. Automated sensor systems can monitor areas of your business that were previously tracked by hand. Wireless sensors are able to record temperature or humidity levels every 10 minutes and captured data can be accessed from any internet-enabled device. This frees up manpower and time, allowing employees to focus on more important job responsibilities.

Monnit remote monitoring systems are a reliable and cost-effective solution for any company. Installation is easy, a complete wireless network can be set up in only 15 minutes. Data begins recording immediately and users can export data readings to remain compliant with CFR 21, part 11. Never worry about poor data or bad response times regarding potentially dangerous conditions again! Receive email, text, or voice call notifications should conditions fall out of safe levels, allowing for an immediate response and significant savings.

How the Monnit Solution Works

Wireless Sensors — Over 50 Different Wireless Sensor Types Available.

Wireless Gateway — Ethernet, Cellular USB and Serial Gateways Available.

Online Monitoring Software — Access Anytime From Anywhere. Free and Premium Versions Available.

Mobile Apps and Alerts — Stay Connected Anywhere You Are. Instant Notification With Free Text and Email Alerts.

The Monnit Solution

Monnit products consist of wireless sensors, gateways, and software to offer a complete remote monitoring solution. Wireless sensors are used to monitor various environmental aspects of a business and are able to integrate with existing equipment, such as coolers, appliances, equipment, etc. to record data in real time. Wireless gateways act as a communication bridge between wireless sensors and the iMonnit online monitoring software, which allows users to view sensor information anytime through a computer, tablet or smart-phone. The iMonnit software can also alert send alerts to any internet enabled device via email, text message, and/or voice call should conditions fall out of safe thresholds.

Monnit's wireless sensor network can be expanded from a single local area to a multi-site network with sensors anywhere in the world, as long as the sensors are connected to a Monnit gateway. The gateway will then transmit the data to iMonnit (cloud-based software) which allows users to configure, monitor, and manage all of their locations from one network.

Monnit has over 50 different wireless sensor types, all have unique characteristics depending on their application and solution provided. Monnit also offers different gateway communication options. These include cellular, ethernet, USB and serial MODBUS, providing a variety of ways to connect your devices to iMonnit secure cloud software. In addition to viewing all data in iMonnit, users can also opt for Monnit MINE which pushes all of the sensor data recorded to any other software application written in C# or Java. If Monnit's current offerings are not exactly what is needed, our engineering team is happy to invent a completely custom solution specifically tailored to any need.

Features and Benefits

- Easy to setup and use
- Reliable, proven technology
- Low cost
- Low power/long life
- Exceptional wireless range
- 50+ sensor types

- Scalable / Expandable (100 sensors per gateway)
- Global RF frequencies
- Cloud-based monitoring software
- Provides alerts by text message, email, or phone call
- Accessible 24/7 from anywhere
- Custom sensors available upon request

Benefits For Your Business

Food Storage and Preparation Temperatures

Monnit wireless sensors can be placed in refrigerators, food prep stations, and other storage areas to provide real-time monitoring and recording of temperature, humidity and/or door status. These environmental conditions can be viewed in real-time on any internet enabled device. These automated systems eliminate the potential for human error in addition to saving time and money. Ensure your stock is safe, even after hours.

If the temperature where your food is stored becomes too hot or too cold, an alert will be generated and can be sent to multiple computers, mobile devices, or a local warning system to notify employees nearby. These instant notifications allow for a fast response should something go wrong, allowing companies to save their food assets before costly spoilage occurs.

> "They say you never know when disaster will strike. Well, now we do! Monnit's remote monitoring system is such a valuable tool when it comes to protecting our buildings and everything in them."

– Leroy R., Property Management

Cost Savings - Food Storage Incident

Any restaurant manager or owner knows how big of a factor food loss is to the ultimate success of the restaurant. Below is a simple financial outline describing a situation where a walk-in cooler breaks and the food inside becomes unusable.

Average Inventory Cost in Cooler	$15,000 - $30,000
Average Cost of Repair	$300 - $500
Average Time Open Lost	0 - 24 hours
Average Cost of 1 Incident	$18,000+
Cost of a Monnit Solution	< $500

Average # of Areas to Manually Check	7+
Average Hourly Labor Rate	$15.00 / hour
Average Hourly Labor Rate (fully burdened)	$18.00 / hour
Time Spent to Record Each Unit	3 - 5 minutes
Number of Tests per Unit per Day	4 - 8 each
Estimated Cost per Test	$1.00
Estimated Daily Cost (all tests)	$72.50 (7 tests, 5x day, 2.5/hr total time)
Monthly Total Cost	$1,885 (26 days open)
Annual Total Cost	$22,620
Cost of Monnit System (7 units)	< $1000

Additional Benefits For Your Business

Energy Consumption

Another major financial draw for restaurants is overall energy consumption. According to the Energy Information Administration, restaurants use more than three times the amount of energy compared to the average commercial building. Extended hours of operation, specialized equipment, and constant usage make up the majority of energy consumption, but these things are necessary to maintain daily operations.

One of the major energy expenders are poorly maintained coolers and freezers that do not keep consistent temperatures. These appliances end up running all the time, sucking a lot of electricity in the process. In addition to the energy consumed, there is a higher risk for costly food spoilage should the walk-in malfunction completely. Monnit's A/C current meter wireless sensor allows food service professionals to keep an eye on energy consumption and receive alerts if the electricity turns off or there is a power spike. Combine this sensor with a temperature probe to get a complete picture of a walk-in's condition. Over time, coolers/freezers establish a pattern of behavior and users will be able to fine-tune notification alerts for specific walk-ins. Make sure your perishable food stocks remain protected 24/7 by using a wireless A/C current meter.

HVAC and Guest Comfort

In addition to the energy consumption of walk-ins, there are also ever-increasing costs associated with heating and air conditioning systems. These HVAC systems can be expensive to repair, constant maintenance is required to keep them functioning at peak levels. Properly managed HVAC systems consume less energy than systems not maintained on a regular basis. The problem with these systems is they are often in hard to access areas, making consistent monitoring a challenge. Monnit offers a remote solution which allows users to keep an eye on HVAC systems without having to access the roof every day.

Monnit offers a specific kit for HVAC systems, but users can also combine any sensors together to create a solution tailored specifically for any set up. The kit includes 1 quad temperature

sensor (four probes to monitor different lines), 1 A/C current meter, and 1 duct temperature sensor for inside the restaurant. Now restaurants can monitor the temperature and status of equipment in the kitchen while keeping an eye on patrons in the dining area. Monnit makes it easy to protect your business from every angle, recorded sensor data can be viewed in a centralized, secure cloud portal accessible from any internet enabled device.

Key Takeaways

- A number of regulations and processes are mandatory within restaurant and food service establishments to ensure food safety.
- Manual documentation is time consuming, resource intensive, and prone to human error.
- Monnit's automated system can properly track and record temperature critical processes such as food storage and preparation temperatures.
- Monnit systems can protect food inventories, preventing spoilage due to cooler or freezer failures by immediately alerting staff of any potential issues.
- Restaurants can save money by tracking power consumption of coolers, freezers, appliances, HVAC systems, and more.
- Monnit's reliable remote monitoring solutions provide peace of mind 24/7 and send instant notification alerts to any internet enabled device should an issue arise.
- Implementing the Internet of Things in any business is easy and affordable!

About Monnit

Monnit bridges the gap between industry and technology through the Internet of Things, empowering businesses with easy-to-use, low-cost remote monitoring solutions. Monnit solutions can be used to remotely monitor a variety of "Things" (i.e. temperature, motion, humidity, energy use, etc.), alerting you by text, email, and/or phone call when user-defined conditions are met. Our goal is to save you as much time, money, and stress as possible, by preventing issues with inventory, infrastructure, and more.

As a Global Top 50 innovation leader in The Internet of Things (IoT), Monnit's technology has significantly expanded the frontier of both what and how "things" can be connected, monitored and controlled. It is almost impossible to identify an asset, process or solution, from SMB to Enterprise, indoors or outside, commercial to industrial, that cannot be uplifted by one of Monnit's 50+ reliable, affordable, tiny, powerful, wireless monitoring solutions.

For more information about our products or to place an order, please contact our sales department at 801-561-5555.

Visit us on the web at www.monnit.com

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