DICKSON

insights

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Featuring **News** You Can Use.

MICHAEL MILLER ▪ **DICKSON INSIGHTS** EDITOR-IN-CHIEF

As I mentioned last month, **Dickson Insights** got a little face lift, and gained a few pounds for 2015. We've changed things up to better serve our readers, specifically by providing more content that is useful to them. We realized we were cutting some interesting and important content out of our catalog-turned-magazine in 2014, and we didn't want to do that.

That content that was trimmed down in the last year ended up on our blog. Actually, everything we write gets posted to our blog. It's the mother ship to many of the best temperature, humidity, and water pressure content out there on the internet. Some of what we post on our blog doesn't get put into the catalog, because of formatting issues, online exclusive content, or a lack of pages. Even with the four new pages in the 2015 catalog, we can't find room to fit all of what we've produced.

So, we invite you to come take a look at all of our content, at **blog.dicksondata.com.** While you're at it, connect with us on social media if you get a chance:

On Facebook:	**facebook.com/dicksondata**
On Twitter:	**@DicksonData**
On LinkedIn:	**Dickson Data on LinkedIn**

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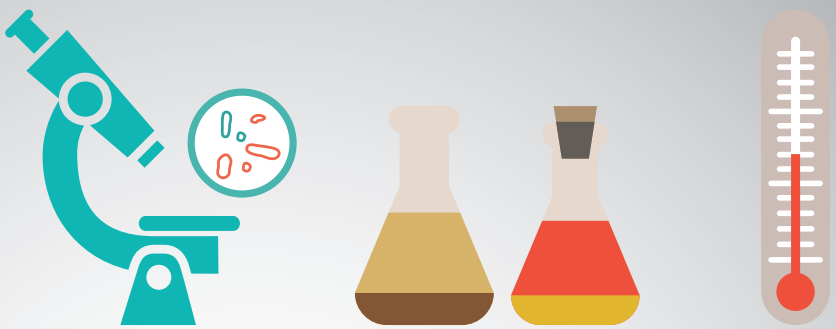
Temperature in **Pharma** Manufacturing

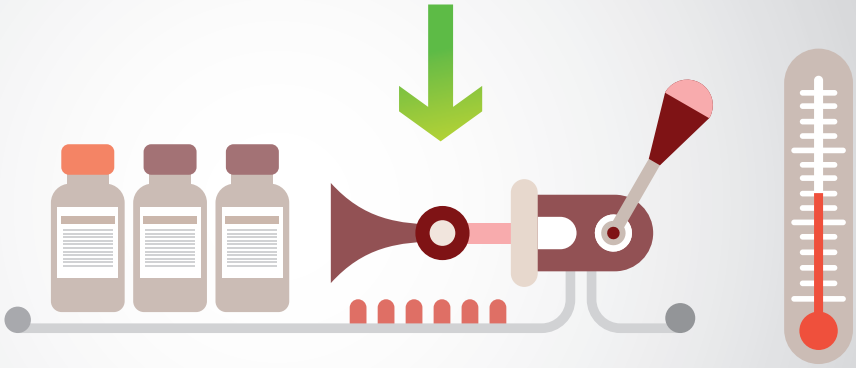
1 RESEARCH

Developing a new drug is a daunting task. Forbes estimates the cost of developing a new drug from scratch at around 5 billion dollars. Much of that cost is built into the research of those pharmaceuticals. Instead of screwing up 5 billion, monitor the temperatures of your tests, whether they are taking place in a clean room, incubator, or freezer.



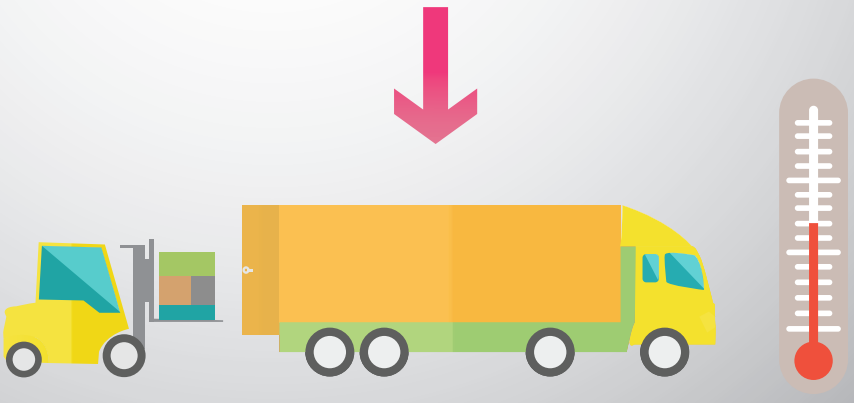
2 CREATION

Once the FDA approves a drug, the manufacturing process begins. Producing little white pills may seem easy. But a lot more goes into the manufacturing process, specifically with regard to manufacturing under a correct environment. On the manufacturing floor, nearly every process, from incoming shipments to finished goods, need to occur at a set range of temps.



3 DISTRIBUTION

Serialization, cell technology, and RFID tags have allowed temperature monitoring to go mobile in pharmaceutical shipments. Whether drugs need to be stored at room temperature, or in a commercial grade freezer, the cold chain should not be broken from a lack of temperature monitoring.



A New Wave Of Regulations:

Monitoring Room Temperatures

Pharmaceuticals are some of the most closely monitored goods in the world, and their storage conditions are no exception. Until recently however, when a company was monitoring the temperature of a pharmaceutical drug, they were probably only interested in those drugs that inhabited the cold chain. What we mean by that, is manufacturers and distributors of drugs and medicine were primarily concerned with the products that needed to be refrigerated or frozen at all times. Temperature data loggers and chart recorders could (and still can be) found in their coolers, freezers, and refrigerated trucks.

What was not commonplace back in the day, was monitoring at room temperature. Why? Well, because it's room temperature. When you take an Aspirin or Cough Syrup, you're not really worried about how it was stored, right? If it doesn't say "refrigerate after opening," or "keep refrigerated," there is nothing to worry about, right?

Sorry, wrong. Controlled Room Temperature, or CRT, has become a bigger and bigger focus of pharmaceutical distributors and manufacturers, because private auditing agencies and governmental regulations care more about it, and products have been lost due to mismanaged room temperature monitoring.

What is room temperature, by the way? What is its definition? What temperature, is room temperature? Some may say 70F, or 75F, or 65F, or something completely different. There is a range, but before recent regulations in the last decade from agencies like the FDA and USP, that range was just assumed. It's not anymore, and it really shouldn't be.

A CRT Definition

It's easiest to understand CRT if we pit it against the Cold Chain. It's widely accepted

that the Cold Chain inhabits a temperature range of 35-46F for refrigerated goods, and -35-5F for frozen goods. Items that say keep refrigerated or keep frozen, for the most part, fit into those ranges.

CRT however, inhabits anything above that 46F threshold. Most times, this is between 60-80F, but not always. This differentiates in theory, the practice of monitoring the temperature of products that can be stored at "room temperature": it comes down to the product label.

Thus, gone are the days of shipping CRT goods with standard packaging, and with an absence of temperature monitoring, and in are the days of label reading, and sorting a warehouse to account for products that are CRT goods.

The Challenge

The biggest challenge facing CRT storage however, is not in temperature monitoring or sorting. Buying a few more data loggers, or rearranging a warehouse is a very solvable problem, a small hurdle. The largest hurdle comes from refrigerants in tight, compact spaces, and the choice companies have between active and passive systems. To learn more about this challenge . . . you'll have to visit our blog! There you will find an expanded version of this article, which will detail refrigerants, monitoring agencies, and the IQ/OQ/PQ of CRT product storage.

CHECK OUT THE

DICKSON BLOG!

Like what you've read? Find more great information about temperature on our blog: **Blog.DicksonData.com**

GET SOME SUPPLY CHAIN SECURITY

Prevent Lost, Stolen Or Damaged Products

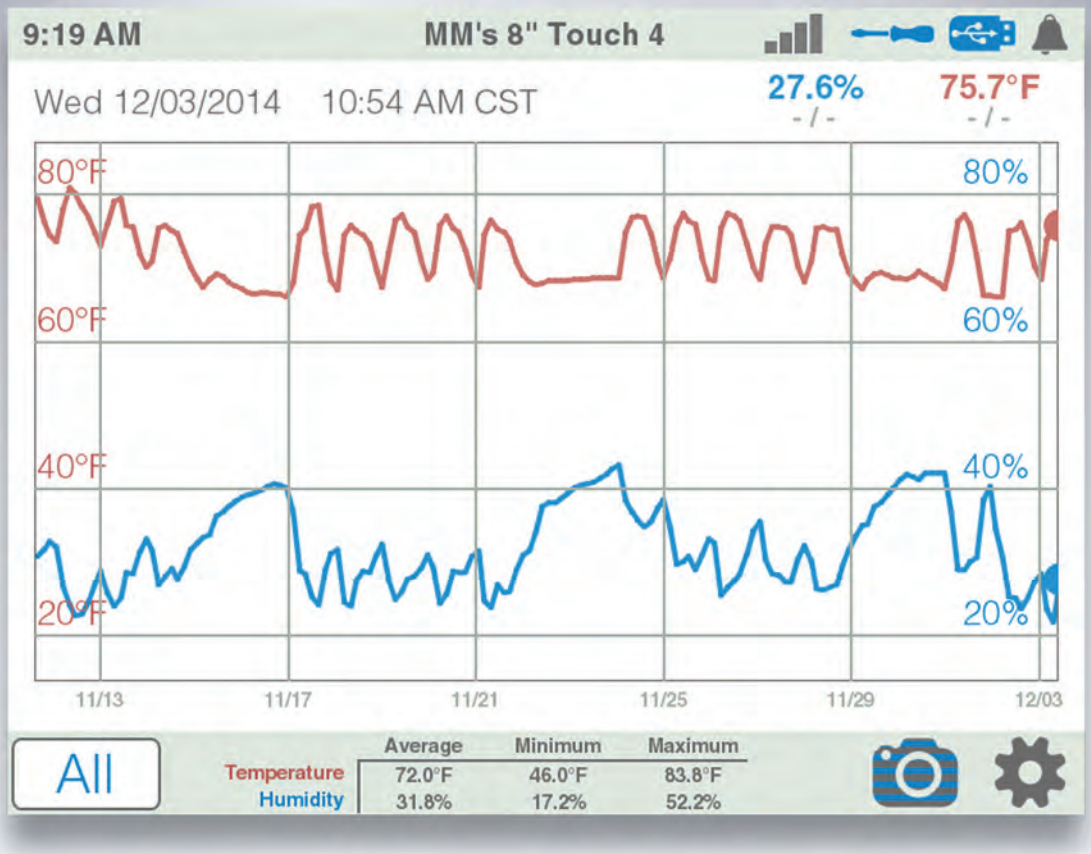
Why are 30-40% of international drugs and medicines counterfeit or stolen? And 1% in the US? Because pharmaceutical drugs and medicines are distributed over a vast, global network. And, they are very profitable. With the rise of new large economies like Brazil and Indonesia, pharma companies are seeing a vast expansion of their distribution networks.

With expansion comes problems, especially if you are one of the most lucrative industries in the world, as the pharmaceutical industry is. When expensive goods move into new markets, there are going to be some growing pains.

Preventing lost, stolen, or damaged products in a supply chain is a daunting task, because finding where and when products are being lost, damaged, or stolen can be such a witch hunt. Unless you have a system of preventive monitoring in place, and a robust one at that, you will find yourself fretting over each and every shipment.

In last month's catalog (available on our website, or call us to request a copy) we touched on the problems in the pharmaceutical supply chain through an explanation of serialization, and why serialization is fast becoming one of the most concrete ways to secure your supply chain from stolen or counterfeit drugs. We'd like to reiterate that point. Serialization is the most effective way to secure your supply chain.

The New **Touchscreen**



- DicksonOne Enabled
- Power Over Ethernet
- Enhanced User Interface

COMING **SPRING 2015**

Contact Us To Learn More.

Dickson Replaceable Sensors

Calibration Made Easy

THE OLD WAY

1. Call or order a recalibration online.
2. Acquire a Return Authorization Code from a Dickson Representative.
3. Take unit and probe out of their environment.
4. Shut down production/storage area if necessary.
5. Install backup system.
6. Box unit up.
7. Ship it to Dickson.
8. Dickson recalibrates the unit and ships it back.
9. Receive the unit.
10. Reinstall system.

Total Down Time: 7-10 Days

THE NEW WAY

1. Call or order a Replaceable Sensor online.
2. Receive Replaceable Sensor.
3. Take old sensor off, put new sensor on.

Total Down Time: 0 Days

MODEL	PROBE TYPE	TEMPERATURE RANGES	ACCURACY	PRICE
TEMPERATURE/HUMIDITY				
R200	Digital Sensor	-40° to 185°F (-40° to 85°C)	±0.8°F, 20 to 120°F (±0.44°C, -6.67 to 48.89°C)	**$69**
R250	Digital Straight Sensor	-40° to 185°F (-40° to 85°C)	±0.8°F, 20 to 120°F (±0.44°C, -6.67 to 48.89°C)	**$69**
TEMPERATURE				
R300	Digital Sensor	-22° to 122°F (-30° to 50°C)	±0.8°F, 20 to 120°F (±0.44°C, -6.67 to 48.89°C)	**$49**
R350	Digital Straight Sensor	-22° to 122°F (-30° to 50°C)	±0.8°F, 20 to 120°F (±0.44°C, -6.67 to 48.89°C)	**$49**
R400	K-Thermocouple	300° to 2000°F (-184° to 1093°C)	±1.8°F, -22 to 122°F (±1°C, -30 to -50°C)	**$49**
R500	Thermistor/Glass Beads	-58° to 158°F (-50° to 70°C)	±0.9°F, -58 to 68°F (±0.5°C, -50 to 20°C)	**$69**
R525	Stainless Steel Thermistor	-40° to 300°F (-40° to 149°C)	±0.8°F, -20 to 176°F (±0.44°C, -28 to 80°C)	**$69**
R600	Platinum RTD	-148° to 350°F (-100° to 176°C)	±0.5°F, -148 to 350°F (±0.3°C, -100 to 176°C)	**$199**
R700	Dual K-Thermocouple	300° to 2000°F (-184° to 1093°C)	±1.8°F, -22 to 122°F (±1°C, -30 to -50°C)	**$99**
R800	Thermistor/Glass Beads	-58° to 158°F (-50° to 70°C)	±0.9°F, -58 to 68°F (±0.5°C, -50 to 20°C)	**$69**

Instant Data Solutions

Report Logger

We decided to make the best compact data logger on the market, our **RL200.** With a new outer case, user selectable logging times, and redesigned PC interface, it's exactly what you need.

$59

Touchscreen Handheld Indicator

TC700/TH700 Instant temperature or temperature/humidity data. No-slip silicone cover. Battery powered.

$299

High Temp Solutions

High Temperature Process Logger

HT350 HACCP Compliant, K-Thermocouple Probe, USB Download, and a large temperature range. Our new Process Logger is perfect for your application. Temperature Range -40° to 257°F (-40° to 125°C).

D605 Probe sold separately. For more information on Dickson's Probes and Accessories, visit **dicksondata.com.**

$349

Waterproof High Temperature Data Logger

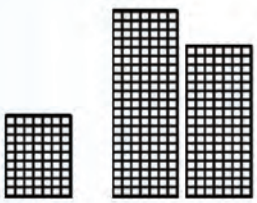
HT300 Waterproof, High Temperature Data Logger. HACCP and FDA Compliant. USB Download. IP68 Rating. Temperature Range -40° to 257°F (-40° to 125°C).

$349

DicksonOne

Temperature and Humidity Monitoring. Re-imagined.

DicksonOne is a wireless temperature and humidity monitoring system that automatically collects your data and delivers it to wherever you are. No more changing charts, no more downloading data.



MULTI-LOCATION How many points will you be monitoring? 1, 5, 100, 1000? From small cheese factories to multi-location healthcare distributors, DicksonOne is up for the task. Monitoring an additional location is as simple as buying another logger.

ALARMS When temperatures get too hot or cold, your power goes out, or your probe is unplugged, DicksonOne can call, text, or email you to alert you of the mishap. Throw away less products, and ensure the safety of your environment, even when you're not there.

INFINITE STORAGE We don't run out of space, and you never have to worry about hard drives or file folders. We've got you covered.

WHY DID WE MAKE IT?

DicksonOne is the direct result of customer feedback like this:

1. We want to monitor **multiple locations** with one system.
2. We're spending too many **personnel** hours changing charts and pens.
3. We want an **easier way** to share our data.
4. We need **more robust** alarming capabilities.
5. I need to view **my data** from anywhere.

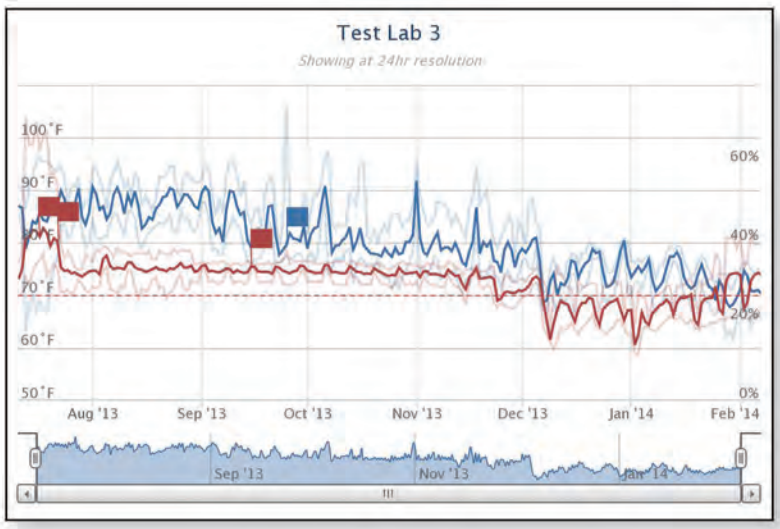
DICKSONONE SOFTWARE

DicksonOne is a SaaS (Software as a Service) platform that automatically stores your data and makes it accessible anywhere.

The software is the real key to DicksonOne. We believe it rises above the competition in usability, security, and scalability. The interface is easy to navigate for everybody, from your IT team to the end-user working with the product you're trying to keep safe. DicksonOne is 21CFR11 compliant, and all data is backed up redundantly, perfect for showing an audit trail. We've had a jump on all other environmental monitoring systems for over a year, and we've kept it that way. We continually improve the system and add new features based on customer feedback. Seriously, someone is working to make it better right now.

The list of features in DicksonOne is endless. Instead of listing them all, we invite you to see for yourself.

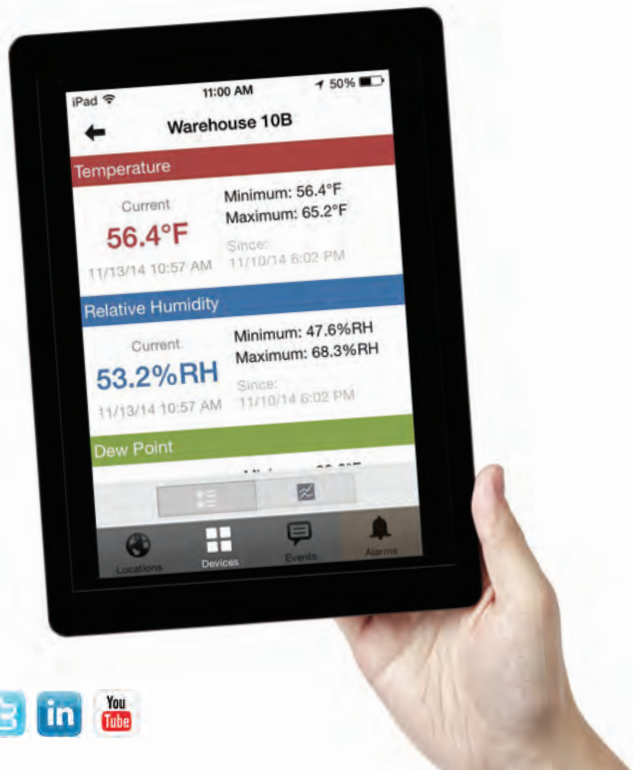
Start your free trial at **www.DicksonOne.com**



DICKSONONE MOBILE APP

DicksonOne Mobile App for iPhone and iPad A great tool for existing DicksonOne customers. Browse all devices and locations. Detailed channel display for seeing current data. Graphs for viewing current trends and historical data.

Requirements: Compatible with iPhone 3GS, 4, 4S, 5, 5S, 6, 6+, iPad, and iPod touch 3rd, 4th, and 5th generations. Required iOS 6.1 or later. This app is optimized for the iPhone.



Connect With Us:

DICKSONONE REPORTING SUITE

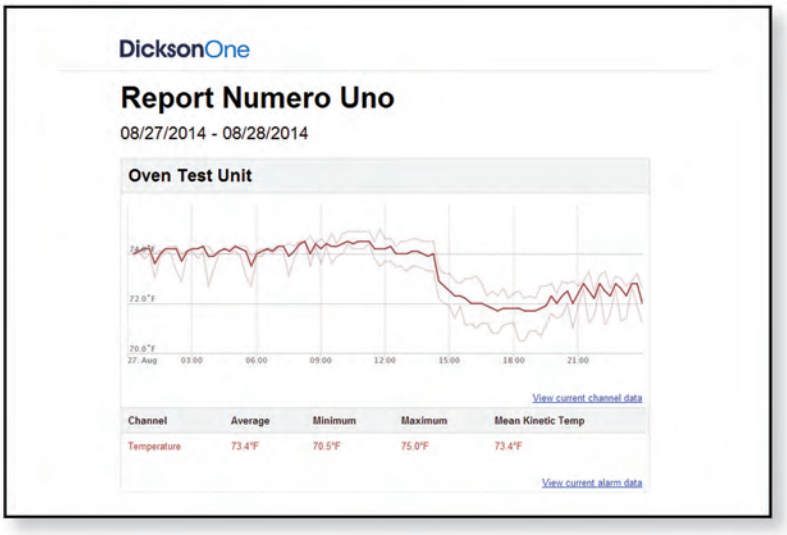
DicksonOne Reporting Suite is the latest edition to our wireless environmental monitoring system DicksonOne.

The Reporting Suite allows you to:

- Create and customize environmental reports
- Choose who in your organization will receive those reports
- Change and modify the frequency of reports

Our **DicksonOne** experts have built out a knowledge base catered directly to you. In our support pages you will find information on how to set up alarms, reports, change sample intervals, and much much more.

Visit **Support.DicksonOne.com** to take full advantage of the system and build out the features of environmental monitoring that are important to you.



Reports That Go **Great** With Your Morning Cup Of Coffee

DICKSONONE.COM

INFO, TIPS AND MUCH MORE

DICKSONONE HARDWARE

DicksonOne Data Loggers are robust and reliable. With battery backup, your choice of Ethernet or Wi-Fi communication, and a digital display, these loggers provide the security and convenience your application needs.

ENH20
Ethernet Temperature and Humidity Logger

WFT21
WiFi Vaccine Temperature Logger

WFT25
RTD Temperature Logger

DicksonOne
Hardware Pricing

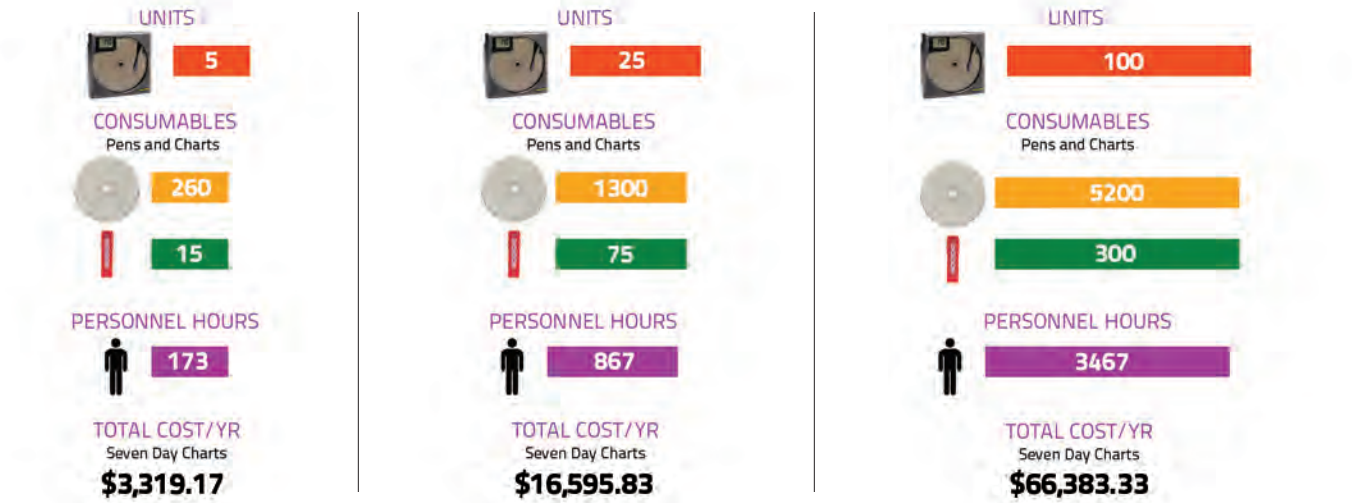
MODEL	REMOTE PROBE	PRICE
WFH20/ENH20	Digital Temperature and Humidity Replaceable Sensor	$499
WFT20/ENT20	Digital Temperature Sensor	$499
WFT21/ENT21	Thermistor Temperature Sensor with Gass Beads	$479
WFT23/ENT23	K-Thermocouple Temperature Sensor	$479
WFT25/ENT25	Platinum RTD Temperature Sensor	$599

DicksonOne
Software Pricing

DEVICES	FEATURES	PRICE
1 to 10	Unlimited Data, Multiple Sample Rates, API Access, Email, Phone, and Text Alarms	$300/year
11 to 25	Unlimited Data, Multiple Sample Rates, API Access, Email, Phone, and Text Alarms	$725/year
26 to 50	Unlimited Data, Multiple Sample Rates, API Access, Email, Phone, and Text Alarms	$1400/year
51 +	Unlimited Data, Multiple Sample Rates, API Access, Email, Phone, and Text Alarms	Call for Quote

* Dickson offers a Basic Plan, with 30 Day Data Deletion, and 1 hour sample rates for unlimited loggers at no cost.

Consider The Cost Of That Old Chart Recorder...



Temperature and Temperature/Humidity

Data Logging Solutions

Data loggers are cost effective solutions for monitoring countless applications. With solutions for the food, pharma, manufacturing and dozens of other industries, Dickson's data loggers get you your data how you want it.

1

2

3

4

1 **SM300 $249** Temperature Logger. Range -4 to 158°F, -20 to 70°C. Accuracy ±0.8°F, ±0.44°C.
SM320* $299 Temperature Logger. Remote Probe. Range with Probe -300 to 2000°F, -184 to 1093°C. Accuracy ±1.8°F, ±1.0°C.
SM325* $399 Temperature Logger. Two Remote Probes. Range with Probe -300 to 2000°F, -184 to 1093°C. Accuracy ±1.8°F, ±1.0°C.
SM420 $499 Temperature Logger. Remote Probe. Range with Probe -50 to 350°F, -45 to 176°C. Accuracy ±0.5°F, ±0.28°C.
TM320 $299 Temperature and Humidity Logger. Range -4 to 158°F, -20 to 70°C. Accuracy ±0.8°F.
TM325 $399 Temperature and Humidity Logger. Remote Probe. Range -40 to 185°F, -40 to 85°C. Accuracy ±0.8°F.

2 **SP125 $119** Temperature Logger. Accuracy ±1.2°F, ±0.67°C. Range -10 to 176°F, -23 to 80°C.
SP175 $229 Temperature Logger with Thermocouple Probe. Accuracy ±1.8°F, ±0.1°C. Range -300 to 2000°F, -30 to 50°C. A203 Probe required for +500°F.
TP125 $199 Temperature and Humidity Logger. Accuracy ±0.8°F, ±0.45°C. Range -10 to 176°F, -23 to 80°C.

3 **SP425 $159** Temperature Logger. Digital Display. Accuracy ±1.2°F, ±0.67°C. Range -4 to 158°F, -20 to 70°C.
TP425 $249 Temperature and Humidity Logger. Digital Display. Accuracy ±0.8°F, ±0.45°C. Range -4 to 158°F, -20 to 70°C.

4 **SK550 $699** Temperature. Pack of twelve. Accuracy ±1.8°F, ±1°C. Range -4 to 158°F, -20 to 70°C.
TK550 $999 Temperature & Humidity. Pack of twelve. Accuracy ±1.8°F, ±1°C. Ranges -4 to +158°F, -20 to +70°C.

Software required and sold separately. For software and other accessories, visit Page 16, call **630.543.3747** or go to **www.DicksonData.com.**

Connect With Us

Dickson Social Media Accounts

@DicksonData

Channel: DicksonData

Search "Dickson"

Search "Dickson Data Loggers"

Connect With Us:

Temperature and Temperature/Humidity

Chart Recorders

Want a physical readout right where you are monitoring? Our Chart Recorders have you covered. For ninety years we've built the best chart recorders in the business. Check out our models below.

8 and 6 Inch Models

Eight and Six Inch Chart Recorders display detailed temperature and humidity values.

MODELS AND FEATURES

KT6	6 Inch Temperature	**Starting at $369**
KT8	8 Inch Temperature	**Starting at $419**
TH6	6 Inch Temperature and Humidity	**Starting at $489**
TH8P	8 Inch Temperature and Humidity	**Starting at $489**

4 and 3 Inch Models

Four and Three Inch Temperature Chart Recorders designed to fit any application.

MODELS AND FEATURES

SL4350	4 Inch	**$239**
SL4100	4 Inch	**$239**
SC3 Series	3 Inch	**$239**

Charts sold separately. For charts and accessories, call **630.543.3747** or go to **www.DicksonData.com.**

PRESSURE DATA LOGGERS

Pressure Data Logger One second sampling rate. User replaceable battery. Optional delayed start. USB connectivity. Pressure sensor includes built-in diaphragm seal.

PR125	**$499**	0-100 PSI
PR325	**$499**	0-300 PSI
PR525	**$599**	0-500 PSI

Rugged Utility Pressure Data Logger Water resistant case. 3 year battery. Unobtrusive design. Fits easily in a toolbox. USB Connection.

PR150	**$499**	0-100 PSI
PR350	**$499**	0-300 PSI

PRESSURE CHART RECORDERS

4 and 8 Inch Models

Four and Eight Inch Chart Recorders to meet your needs.

Single AA battery powered. Rugged low-maintenance design features. 7-day or 24-hour recording times. 1/4 inch NPT Connector.

MODELS AND FEATURES

0-100 PSI	**PW860/1**	**$629**	**PW470**	**$449**
0-200 PSI	**PW864/5**	**$629**	**PW474**	**$449**
0-300 PSI	**PW866/7**	**$629**	**PW476**	**$449**
0-500 PSI			**PW479**	**$629**
0-1000 PSI	**PW875**	**$749**		

Charts sold separately. For charts and accessories, call **630.543.3747** or go to **www.DicksonData.com.**

7 Reasons You Should Volunteer To Help Your Hospital's IT Team

Your Hospital IT Team needs your help. We aren't talking to the civilians of the healthcare world, or to Computer Science students seeking out summer internships. We are speaking to the people working in the hospital, who already have way, way, way too much to get done. However, after these seven reasons, we think all you doctors, nurses, PT's, and EMT's will reconsider the tech nerds in your workspace.

1. They need it.

Really, they do. Your Hospital's IT team, whether outsourced or internal, is in desperate need of your help. Not only because they are probably swamped with things to do (just like you, we know) but because they don't think like a healthcare professional who treats patients, or like a healthcare administrator who handles important hospital decisions. Your perspective is important and they need to hear it.

2. You'll become more tech savvy, thus a better healthcare professional.

No one has ever said, "I'm glad I didn't know how to work that electrocardiogram," or "It was so nice not being able to view that patient's medical history on my computer." Understanding the technology you work with (or could work) with is essential to healthcare professionals. We aren't saying you don't know how to use a computer, rather we believe volunteering for your HIT team will allow you to solve your tech issues and troubleshooting questions faster and more efficiently. Tech knowledge rubs off!

3. Your IT team will become more user-conscious.

By volunteering your knowledge or help to your IT team, you will rub off on them as well. As many companies and organizations know, departments have a way of becoming entrenched in their own perspective. Don't let your IT team do that.

4. Test cases are the best cases.

Beta testing new devices, networks, or processes for your HIT team will keep you updated on the new technology entering your hospital before it actually enters the hospital. Practice makes perfect, and helping work out kinks in computer systems before those computer systems enter a hospital room will make your hospital a better place.

5. You get first access to new technology.

When you volunteer, good things come back to you. By helping out your IT team, you will get first access to the newest healthcare technology. You also may be the first to get a new keyboard or mouse!

6. Your hospital will run smoother.

Simply put, when departments work together, things go a lot smoother. By understanding the nuances of your HIT team, and also offering them an end-user's perspective on the technology in the hospital, day-to-day operations will seem less stressful.

7. Your patients will be safer.

When the hospital runs smoother, patients are treated better. It's as simple as that.

The Ever Expanding Supply Chain

With the Affordable Care Act sweeping healthcare in the U.S., hospital supply chains have had the spotlight shown on them: a somewhat disregarded discipline in a hospital has now come to the forefront in cost savings.

The Affordable Care Act has affected hospital supply chains in the realm of reimbursements. Formerly, reimbursements for supplies were based on volume: the more operations and procedures a hospital or hospital network does, the more supplies they would be reimbursed for. Not the case after Obamacare. With merit-based reimbursements as the main form of reimbursement a hospital can receive, Obamacare has led to some tight squeezes in some hospital supply chains.

The title of this article states an "ever expanding" healthcare supply chain, but we just used the phrase "tight squeezes." What gives?

Well, for hospitals the supply chain is expanding, because who they are getting their supplies from is changing. Large distributors are being overlooked more and more, as large shipments are now being bought directly from manufacturers instead of through a third party. This leads to hospital networks revaluating their supply chain, preforming validations again, and expanding the pathways their goods move through.

Looking at larger chains specifically, the vetting out of warehouses used by hospitals is happening across the country. It may seem strange that the same organization that operates Emergency Rooms and pays doctors also leases out large warehouses with management systems and racks upon racks of goods, but it is apparent and noticeable in the hospital supply chain.

That doesn't even count new overseas markets that hospitals are beginning to tap. The globalization of healthcare supplies has forced hospital supply chain managers to seek out goods in new areas, and understand the chain that will bring those goods into their hospitals.

Third party influence from hospital supply giants will obviously continue, and the healthcare world is waiting to see what their response will be.

Our best guess for what the future holds for hospitals, supply companies, and manufacturers, is a web of integration between all three. It may start off as a patchwork system, but in the coming years that system will get more robust, with hospitals deciding, based on price, whether they can attain goods directly from manufacturers at a better cost-savings than a distributor can deliver it for them, or vice-versa. It may lead to more competition, or less.

Understanding Warehouse Temperature:
The Effect of Seasonal Changes

Last month, we posed the question: "Is knowing the temperature of your warehouse like alchemy?" because that's something that we ask ourselves here at Dickson all too often. This question inevitably lead to more questions about warehouse mapping, and honestly, answers are hard to come by. Temperature mapping your warehouse, whether that be a medical device, pharmaceutical, or food warehouse, is a tricky science.

So, we've decided to tackle all those questions one-by-one. Last month we analyzed how the bay door, or loading dock, influences the temperature of your warehouse. This month, we are taking a look at seasonal changes. Thus, this is the second article in our series of posts titled, "Understanding Warehouse Temperature." Hopefully by the end of this series, we will have given you a lot of new information on the delicate science of warehouse temperature mapping. Check back in to see next month's issue of Dickson Insights for the third article in this series, or go to **blog.dicksondata.com/tag/warehouse** to read all of the posts before they are published.

So, what's the deal with seasonal changes?
First, we'd like to ask you to agree with us on a simple fact: the temperature outside influences the temperature inside. For warehouses (and anything besides an incubator) this is a fact! We get a lot of readers who imagine their medical device warehouse functions as a vacuum to all outside negative conditions. We've been to dozens of warehouses. Trust us, it does not.

If we can agree that the temperature outside has an effect on the temperature inside your warehouse, then we can also agree that it has an effect on the products moving in and out of your warehouse. Our first question: "What happens when the temperature outside of your warehouse changes?"

For many in the U.S., February is winter's last gasp of cold air, before March and April finally bring some much needed warm weather relief. That change in temperature, from bitter cold to warm(er) and rainy, leads to changes in the products coming into your warehouse, and the products being shipped out of your warehouse. Even if that change is subtle, it still exists.

Dealing with that change is the challenge. Here's what we recommend:

Temperature map your facility multiple times a year. We argue 3-4 times is best, depending on the climate that you inhabit. For those San Diego-ians, maybe twice a year is enough. However, if you experience all four seasons, you should map your warehouse a minimum of four times. Track that data, analyze it, and adjust the temperature monitoring and HVAC controls in your warehouse accordingly.

Account for windows, doors, and loading docks. The biggest problem spots when it comes to seasonal changes: these are how heat and cold get into your warehouse, so be wary of them. Place a temperature monitor at these locations all year round, and then check to make sure the temperature swings aren't too drastic when things turn from hot to cold, and then back again.

Check the MKT of your shipments frequently. Seasonal changes will affect the temperature of your shipments, both incoming and outgoing. So, place a data logger in a batch of your products with each large shipment, and compute for MKT to check how temperature affected your product during its entire journey.

We Pose The Question:

Display Or No Display?

Below two parties provide evidence on why you should, or should not get a temperature, or temperature and humidity data logger with a display . . . a verdict follows.

The Case For The Display:

The case for using a data logger with a display begins at the source, the actual data logger. When you place a data logger in an environment, don't you want to know what temperature it is reading? Why wouldn't you? Purchasing a data logger that has a display is an investment in your application and employees. Displays allow your employees to read data at the source, and displays provide a visual "alert" when things go wrong in your facility. Having that peace of mind, is worth it every time.

The Case Against The Display:

Our colleagues presenting The Case For The Display would have you believe that the display is essential, not costly, and at the very least, only a benefit to your facility. We would agree with them on one point: that having a display is nice. But, it does not come without costs. Displays cost more money, and they use more battery. Also, data loggers with displays are typically larger than those without. Finally, what is a data logger really used for? Logging data. Viewing data at the source is what a thermometer is for. Downloading, viewing, and analyzing the temperature data of your facility is what is truly important.

Finally, with WiFi monitoring on the upswing, displays will become obsolete.

The Verdict: A Hung Jury

The jury could not come to a conclusion, because the decision is unique to each company! Think about the two cases presented above, and make the decision based on what your facility needs!

THE RIGHT STUFF.

Finding The Best Monitoring Company Requires That You Do Your Homework.

Choosing a company to partner with you in order to help monitor your environment can be tedious and taxing. With multiple choices for every industry, and dozens of variables to consider (before even getting to the variables that you will monitor), the choices seem endless. So how do you narrow it down? We've built the following homework assignment that when completed, will get you through the process.

1 Take An Internal Assessment

Who are you?
The first question you need to answer is a reflective one: who are you? Answers to this question will be wide-ranging, and there isn't a wrong answer, besides an unfilled blank. Maybe you are a beef jerky producer from Montana, or a nurse from Staten Island. Whatever the case, knowing who you are and what your application is will inform the rest of the answers in this section of the assignment, and your monitoring plan as a whole.

Why do you want to monitor your environment?
What's your reason? Example answers may include, but are not limited to: My auditor said I had to, I am losing money from a dysfunctional cold chain, or I want to test a control group against a test group with a variable of the test being temperature. Again, for this question, no wrong answer. Just answer to the best of your ability.

Where will you be monitoring?
Are you monitoring inside a semi-truck? Inside two semi-trucks? Three? Or are you inside a warehouse, where you will need hundreds of data loggers? Answering this question and the next will allow you to move into Part 2 with enough information to start answering what kind of data logger, or data logging company, you want/need. Remember: location, location, location.

How much money do you have?
A little forward, sure. But, really, how much? If you are submitting a budget for the next year, maybe you hold off answering this question until you have created a product definition and tested out the market, but if you already have you budget set, take a look at it. Is it enough? Is it too much? If you are a large company, the cost of monitoring a variety of locations can bleed into the millions of dollars. If you just want to gage the temperature of your beef that is dry-aging in your mini-fridge, you probably don't need too much cash.

2 Create A Product Definition

What variables do you need?
Step two! You made it! First question: what in the world is so important that you want to monitor it? Is it temperature? Temperature and humidity? Temperature, humidity and dew point? Mean Kinetic Temperature? What?! It's time to create your product definition, and the easiest way is to eliminate products that don't actually take and store the data that's important to you.

What features do you need?
Data loggers seem to have an endless array of features, from the simple (display, battery backup, probe) to the robust (radio frequency, graphing capabilities, mobile apps). You need to start by making a list of essential things a data logger has to have in order for you to even consider it. Things like alarms, long battery-life, or display, may all fit onto that list.

What kind of connectivity do you need?
If you just want to buy one data logger for pretty cheap, you probably don't need any. If you are like most of our readers however, this question is the big question. Monitoring the temperatures of larger facilities, where 5, 10, 100 monitoring points are being measured every day means automation is a must. Connectivity (your data logger sending its data to a server automatically, without you having to download it) is a consideration that will take a bit of research on your part. Want a little help to get you started? Okay, fine. There are many ways to transfer data, but here are the main ones: Ethernet, WiFi, Radio Frequency, and Cellular. Each one has its pros and cons.

Will there be any services involved?
These generally include: installation, calibration, validation, training, and ongoing support. This is dependent on what your auditor says you need, if you have one of those guys/gals.

When do you want them by?
For bigger companies: if you are sending out a RFP, understand that lead times will vary company to company. Factor that into your schedule! For smaller companies, this comes down to shipping and recalibration. Data logger manufacturers can generally get 1-5 loggers to you within a day or so. Bigger orders? Might take a few more days.

3 Find A Product

Will you buy through a sales person, or online?
It's just a preference. Talking to a physical sales person can be rewarding, in that you may get a discount, or learn about services you didn't know you needed but probably do. Buying online? Well, that's fast and easy.

Do you need to send out a RFP?
If you are new to the temperature monitoring world, and aren't sure what's out there as far as products, but you know what you want, submit an RFP! That will allow companies to put all their ducks in a row, and cater to your needs. RFPs are tedious, so make sure you know what you are looking for before you set out to make one.

How many bids will you take?
Whether you are buying one, two, or 1,000 temperature monitors, you will need to put a cap on when your research is complete. You may have a past relationship with a company, it's going great, and you will stop the bidding process at one. Other times, 10 companies may be involved, whether you are just shopping for a simple data logger online, or submitting an RFP for a national corporation.

How did it go? We hope well. Feel free to contact us if you have trouble filling out any of the questions.

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