UNDERSTANDING THE DRUG SUPPLY CHAIN SECURITY ACT

HOW CAN PHARMACEUTICAL COMPANIES REMAIN COMPLIANT?
**FEATURE**

14 Understanding the Drug Supply Chain Security Act
How Can Pharmaceutical Companies Remain Compliant?

---

**ABOUT US**

Dickson was incorporated in the United States in 1923. By using the best and newest innovations, Dickson enables our customers to manage compliance, asset protection, data analysis, and product quality with confidence. Today, Dickson provides validated solutions and services for over 80% of Fortune 100 companies in highly-regulated industries including healthcare, medical device, pharmaceutical, food, aerospace and more. With the trust of over 80,000 customers worldwide, Dickson helps to protect billions of dollars' worth of assets and remains an industry innovator and leader.

---

**IN THIS ISSUE**

24 Flying into the Future
Perspectives on Unmanned Aviation

07 Green Anesthesia
Connecting Patient Care with Planet Care

---

**DICKSONONE**

08 Simple. Scalable. Compliant.
Life Isn’t One Size Fits All. Your System Shouldn’t Be Either.

---

** ALSO IN THIS ISSUE**

26 Meet Your Regional Sales Director

---

**SERVICES**

03 Introduction
04 Mapping
04 Validation
06 Installation
06 Calibration

---

**PRODUCTS**

17 Introduction
18 DicksonOne
19 Data Loggers
21 Replaceable Sensors
22 Chart Recorders
In most regulated industries, monitoring systems are not the only thing necessary for compliance. Turn to our team of experts for your compliance needs.
Let us verify your equipment has been properly installed and that it is ready to work per your specifications. Once that’s in place we will work to establish a baseline for the equipment.

We will confirm your equipment operates appropriately within its defined operating parameters. You will also receive verification that your system meets its design specifications.

Dickson takes the time to authenticate your equipment is performing correctly and within specification. You can count on Dickson to verify that it is meeting your intended use.

Dickson’s devices have been monitoring temperature for almost a century. Now you can leverage that experience and our knowledgeable team of experts to help manage your compliance process from start to finish.

Our experts are here for you.

630.543.3747

support@dicksondata.com

Meet Our Director of Services

Antoine Nguyen
Director of Services

Before coming to Dickson, Antoine spent more than 18 years in validation with companies that answer to FDA audit. With Antoine and his team at the helm, you can feel confident that your job is well cared for.

Dickson’s devices have been monitoring temperature for almost a century. Now you can leverage that experience and our knowledgeable team of experts to help manage your compliance process from start to finish.

Our experts are here for you.

630.543.3747

support@dicksondata.com

Meet Our Director of Services

Antoine Nguyen
Director of Services

Before coming to Dickson, Antoine spent more than 18 years in validation with companies that answer to FDA audit. With Antoine and his team at the helm, you can feel confident that your job is well cared for.

Dickson’s devices have been monitoring temperature for almost a century. Now you can leverage that experience and our knowledgeable team of experts to help manage your compliance process from start to finish.

Our experts are here for you.

630.543.3747

support@dicksondata.com

Meet Our Director of Services

Antoine Nguyen
Director of Services

Before coming to Dickson, Antoine spent more than 18 years in validation with companies that answer to FDA audit. With Antoine and his team at the helm, you can feel confident that your job is well cared for.

Dickson’s devices have been monitoring temperature for almost a century. Now you can leverage that experience and our knowledgeable team of experts to help manage your compliance process from start to finish.

Our experts are here for you.

630.543.3747

support@dicksondata.com

Meet Our Director of Services

Antoine Nguyen
Director of Services

Before coming to Dickson, Antoine spent more than 18 years in validation with companies that answer to FDA audit. With Antoine and his team at the helm, you can feel confident that your job is well cared for.

Dickson’s devices have been monitoring temperature for almost a century. Now you can leverage that experience and our knowledgeable team of experts to help manage your compliance process from start to finish.

Our experts are here for you.

630.543.3747

support@dicksondata.com

Meet Our Director of Services

Antoine Nguyen
Director of Services

Before coming to Dickson, Antoine spent more than 18 years in validation with companies that answer to FDA audit. With Antoine and his team at the helm, you can feel confident that your job is well cared for.

Dickson’s devices have been monitoring temperature for almost a century. Now you can leverage that experience and our knowledgeable team of experts to help manage your compliance process from start to finish.

Our experts are here for you.

630.543.3747

support@dicksondata.com

Meet Our Director of Services

Antoine Nguyen
Director of Services

Before coming to Dickson, Antoine spent more than 18 years in validation with companies that answer to FDA audit. With Antoine and his team at the helm, you can feel confident that your job is well cared for.

Dickson’s devices have been monitoring temperature for almost a century. Now you can leverage that experience and our knowledgeable team of experts to help manage your compliance process from start to finish.

Our experts are here for you.

630.543.3747

support@dicksondata.com

Meet Our Director of Services

Antoine Nguyen
Director of Services

Before coming to Dickson, Antoine spent more than 18 years in validation with companies that answer to FDA audit. With Antoine and his team at the helm, you can feel confident that your job is well cared for.

Dickson’s devices have been monitoring temperature for almost a century. Now you can leverage that experience and our knowledgeable team of experts to help manage your compliance process from start to finish.

Our experts are here for you.

630.543.3747

support@dicksondata.com

Meet Our Director of Services

Antoine Nguyen
Director of Services

Before coming to Dickson, Antoine spent more than 18 years in validation with companies that answer to FDA audit. With Antoine and his team at the helm, you can feel confident that your job is well cared for.

Dickson’s devices have been monitoring temperature for almost a century. Now you can leverage that experience and our knowledgeable team of experts to help manage your compliance process from start to finish.

Our experts are here for you.

630.543.3747

support@dicksondata.com

Meet Our Director of Services

Antoine Nguyen
Director of Services

Before coming to Dickson, Antoine spent more than 18 years in validation with companies that answer to FDA audit. With Antoine and his team at the helm, you can feel confident that your job is well cared for.

Dickson’s devices have been monitoring temperature for almost a century. Now you can leverage that experience and our knowledgeable team of experts to help manage your compliance process from start to finish.

Our experts are here for you.

630.543.3747

support@dicksondata.com

Meet Our Director of Services

Antoine Nguyen
Director of Services

Before coming to Dickson, Antoine spent more than 18 years in validation with companies that answer to FDA audit. With Antoine and his team at the helm, you can feel confident that your job is well cared for.

Dickson’s devices have been monitoring temperature for almost a century. Now you can leverage that experience and our knowledgeable team of experts to help manage your compliance process from start to finish.

Our experts are here for you.

630.543.3747

support@dicksondata.com

Meet Our Director of Services

Antoine Nguyen
Director of Services

Before coming to Dickson, Antoine spent more than 18 years in validation with companies that answer to FDA audit. With Antoine and his team at the helm, you can feel confident that your job is well cared for.

Dickson’s devices have been monitoring temperature for almost a century. Now you can leverage that experience and our knowledgeable team of experts to help manage your compliance process from start to finish.

Our experts are here for you.

630.543.3747

support@dicksondata.com

Meet Our Director of Services

Antoine Nguyen
Director of Services

Before coming to Dickson, Antoine spent more than 18 years in validation with companies that answer to FDA audit. With Antoine and his team at the helm, you can feel confident that your job is well cared for.

Dickson’s devices have been monitoring temperature for almost a century. Now you can leverage that experience and our knowledgeable team of experts to help manage your compliance process from start to finish.

Our experts are here for you.

630.543.3747

support@dicksondata.com

Meet Our Director of Services

Antoine Nguyen
Director of Services

Before coming to Dickson, Antoine spent more than 18 years in validation with companies that answer to FDA audit. With Antoine and his team at the helm, you can feel confident that your job is well cared for.

Dickson’s devices have been monitoring temperature for almost a century. Now you can leverage that experience and our knowledgeable team of experts to help manage your compliance process from start to finish.

Our experts are here for you.

630.543.3747

support@dicksondata.com

Meet Our Director of Services

Antoine Nguyen
Director of Services

Before coming to Dickson, Antoine spent more than 18 years in validation with companies that answer to FDA audit. With Antoine and his team at the helm, you can feel confident that your job is well cared for.

Dickson’s devices have been monitoring temperature for almost a century. Now you can leverage that experience and our knowledgeable team of experts to help manage your compliance process from start to finish.

Our experts are here for you.

630.543.3747

support@dicksondata.com

Meet Our Director of Services

Antoine Nguyen
Director of Services

Before coming to Dickson, Antoine spent more than 18 years in validation with companies that answer to FDA audit. With Antoine and his team at the helm, you can feel confident that your job is well cared for.

Dickson’s devices have been monitoring temperature for almost a century. Now you can leverage that experience and our knowledgeable team of experts to help manage your compliance process from start to finish.

Our experts are here for you.

630.543.3747

support@dicksondata.com

Meet Our Director of Services

Antoine Nguyen
Director of Services

Before coming to Dickson, Antoine spent more than 18 years in validation with companies that answer to FDA audit. With Antoine and his team at the helm, you can feel confident that your job is well cared for.

Dickson’s devices have been monitoring temperature for almost a century. Now you can leverage that experience and our knowledgeable team of experts to help manage your compliance process from start to finish.

Our experts are here for you.

630.543.3747

support@dicksondata.com

Meet Our Director of Services

Antoine Nguyen
Director of Services

Before coming to Dickson, Antoine spent more than 18 years in validation with companies that answer to FDA audit. With Antoine and his team at the helm, you can feel confident that your job is well cared for.

Dickson’s devices have been monitoring temperature for almost a century. Now you can leverage that experience and our knowledgeable team of experts to help manage your compliance process from start to finish.

Our experts are here for you.

630.543.3747

support@dicksondata.com

Meet Our Director of Services

Antoine Nguyen
Director of Services

Before coming to Dickson, Antoine spent more than 18 years in validation with companies that answer to FDA audit. With Antoine and his team at the helm, you can feel confident that your job is well cared for.
HOW DO YOU IMPLEMENT NEW SYSTEMS?

Let us give you your time back by installing your loggers wherever, whenever. Once everything is up and running, we will test the devices to ensure they are working as intended.

TURNKEY
Sit back and we'll take care of everything.
We install the devices and set up the software on your behalf, and you have the peace of mind in knowing it has all been done right.

HYBRID
Let us help you with some of the heavy lifting.
Your team installs the units and we help manage the software’s implementation, including alarms, locations, permissions, and more.

SELF
Install DicksonOne units on your own.
By following along with our installation guide, it should take just a few minutes to set up each device in your system.

CALIBRATION
WHAT DO YOUR AUDITORS REQUIRE?

Using Dickson’s ISO 17025 A2LA accredited calibration laboratory is the best way to ensure that your Dickson instrument is calibrated properly. With over 90 years of experience, we have SOP’s in place to ensure that each unit is calibrated to a precise and accurate specification.

1-POINT NIST
- One specific temperature and/or humidity point (middle) calibration
- Good if your temperature or humidity varies little
- Specify the temperature and/or humidity point to best reflect your application

3-POINT NIST
- Three-point (high, middle, and low) temperature and/or humidity calibration
- Provides a larger proof of accuracy
- Specify the temperature and/or humidity points to best reflect your application
In healthcare, surgery is used to diagnose and treat a range of ailments. Every operation requires anesthesia, and every time anesthesia is used, the exhaled fumes are removed from the operating room and released into the atmosphere. Most surgeries use either sevoflurane or desflurane, and medically speaking, there is little difference between the two. Many anesthesiologists typically pick one option and continue to use it based on personal preference.

Environmentally speaking; however, the difference is significant. Desflurane is 20 times as powerful in trapping heat in Earth’s atmosphere as sevoflurane. It also lasts for up to 14 years, whereas sevoflurane breaks down in just one year. But what does that mean across the country, and the world? The United States health sector contributes to 10% of the nation’s greenhouse gases, and the World Health Organization calls climate change the top public health issue of the 21st Century.

Yet despite this considerable green difference, many healthcare facilities are unaware of the impact these fumes can have. One anesthesiologist, Dr. Brian Chesebro of Providence Hospital in Portland, is passionate about environmental causes. He spent time researching the gases he uses in surgical procedures and discovered the difference for himself. When he showed his findings to his colleagues in the field, they were stunned to learn about the adverse effects the gas has on the planet. Chesebro explained that the use of desflurane was the greenhouse gas equivalent of driving a fleet of 12 Humvees for the duration of each surgical procedure while sevoflurane is the equivalent of half a Humvee.

Not only is the environmental impact significant, there are also financial benefits. Sevoflurane is considerably cheaper than desflurane. In Chesebro’s hospital, switching saved them $13,000 a year. When each of the eight hospitals in the Providence Health network switched, they realized approximately $500,000 of savings annually.

Prioritizing the use of sevoflurane is a simple switch in many cases, requiring a simple choice during each surgery. Despite this, some anesthesiologists are resistant to change. Dr. Chesebro and his administrative colleagues emphasize that data and education are essential to proving their case. By explaining both the environmental and financial results, it helps to overcome most concerns.

While the environmental impact of desflurane and sevoflurane may pale in comparison to other greenhouse gases, Dr. Chesebro argues that any small, positive change is worthwhile. Although sweeping innovations in healthcare are creating a positive difference for patients around the world, sometimes simple changes like this can make a huge impact. After all, what if better outcomes from surgery could be combined with better outcomes for our planet?
DicksonOne isn’t just a monitoring system.

It’s a spend-more-time-with-patients, avoid-audit-findings, and cover-your-assets system.

DicksonOne is a cloud-based environmental monitoring system featuring an easy-to-use interface for monitoring your critical variables, allowing you to remain compliant without taking up too much of your time. Plus with multiple alarm notification methods, you can ensure the right people are up-to-date on any excursion with time to act before something spoils.

Read on for more information on DicksonOne’s 21 CFR Part 11 compliance, the system’s intuitive interface, alarming, and more.
SIMPLE
DicksonOne touchscreens and data loggers collect temperature, humidity, and differential pressure data and automatically deliver it to the DicksonOne cloud application. No more downloading data or changing charts—DicksonOne does all the work for you.
- Easily navigate the system with DicksonOne’s intuitive interface
- Use the dashboard page to view all loggers by location at-a-glance
- View trend graph and data summary with just one click
- Set up recurring reports, delivered how and when you want them
- Access your data 24/7 from any internet-connected device

SCALABLE
DicksonOne is for monitoring systems of any size. Whether you’re monitoring a single fridge or chambers around the world, all of your data ends up in a single, online platform.
- No limit on adding unique user names and passwords
- Apply alarm conditions and notifications to multiple devices and channels at once with alarm templates
- Conveniently create, edit, and manage alarm notifications and recipients for all locations in one place with escalation policies

COMPLIANT
In highly compliant environments that are heavily regulated, there are a lot of boxes you need to check to ensure you’re ready for an audit. Here are a few of the boxes our system checks:
- 21 CFR Part 11 compliance
- Secure transmission of data and unlimited data storage
- NIST and A2LA (ISO 17025) accredited Calibration Lab
- VFC-approved system for monitoring vaccine refrigerators

PEACE OF MIND WITH REAL-TIME NOTIFICATIONS
We’ll notify you when there’s reason to worry.

Choose when you’d like to be notified:
Set up alarms for high/low variable readings and receive notifications when devices aren’t reporting or a probe has been disconnected.

Choose how you’d like to be notified:
Be notified via text, phone, email, or audible alarm whenever an alarm condition is met.

COMPLY WITH CONFIDENCE
Knowing all of your company’s nuances through cloud-based monitoring and data collection can give you the confidence you need for total compliance. With DicksonOne’s custom reporting feature, you’ll get just that.
Select the sensor that’s right for your application:

- Single or Dual K-Thermocouple Temperature Sensor
- Platinum RTD Temperature Sensor
- Single or Dual Temperature Thermistor Sensor with buffer solution
- Differential Pressure Sensor
- Ambient Temperature or Temperature & Humidity Sensor
- Single or Dual Temperature Thermistor Sensor with buffer solution
- Ambient Temperature or Temperature & Humidity Sensor

The Touchscreen

A capacitive 8" touchscreen offers our best user experience ever, and now features customizable views, alarms, and more. Plus, with DicksonOne compatibility, you get your data at your fingertips, and wherever else you might need it.

- Intuitive user-interface makes it easy to view and manage your data
- Automatically calculates and updates summary data for the selected time range
- Includes passcode protection for unit security

Replaceable Sensors™

With Dickson’s patent pending Replaceable Sensors, you can recalibrate any DicksonOne device on the fly without having to send in your device. Just order a newly calibrated sensor, receive it in the mail, and plug it into the unit in a motion that’s as simple as swapping batteries in your television remote.

Recalibrate in less than a minute!

Just unplug the current sensor and plug in the newly calibrated sensor.

Designed with your needs in mind.

<table>
<thead>
<tr>
<th></th>
<th>DWE</th>
<th>TWE</th>
<th>TWP</th>
</tr>
</thead>
<tbody>
<tr>
<td>DICKSONONE ENABLED</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>WIFI/ETHERNET</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>REPLACEABLE SENSOR PORTS</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>RELAYS</td>
<td></td>
<td>Optional</td>
<td>Optional</td>
</tr>
<tr>
<td>PROXIES</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>VIEW HISTORICAL DATA AT THE POINT OF MONITORING</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>POWER OVER ETHERNET</td>
<td>w/ Adapter</td>
<td>w/ Adapter</td>
<td>✔</td>
</tr>
<tr>
<td>SCREEN SPECS</td>
<td>Segmented Display</td>
<td>8&quot; LCD Touchscreen</td>
<td>8&quot; LCD Touchscreen</td>
</tr>
<tr>
<td>BACKUP BATTERY</td>
<td>1 Week</td>
<td>70 Hours</td>
<td>70 Hours</td>
</tr>
<tr>
<td>BACKUP STORAGE</td>
<td>400,000 Points</td>
<td>1,000,000 Points</td>
<td>1,000,000 Points</td>
</tr>
</tbody>
</table>

DicksonOne Software Plans

Software available in monthly, yearly, and multi-year contracts with features to meet your compliance needs. Be sure to ask about the benefits of multi-year commitments.
Verification
Some inspections may take place because a product in the pharmacist’s possession may be suspect. If this happens, the pharmacist must be prepared to produce supporting evidence for every step and every date set out in the T3.

Penalties
A pharmacist unable to produce the required T3 documentation, or who produces inaccurate or inadequate documentation, may face penalties. Pharmacists may be fined and product may also be quarantined. Transporters, distributors, and manufacturers may also be penalized depending on the severity of the violation.

Supply Chain Responsibility
As well as implementing a recording, archival, and recovery system allowing T3s to be produced at any point. Pharmacists must also closely examine all T3s to ensure accurate transaction reporting and that nothing in the T3 would give an observant, informed, and cautious recipient any reason to question the authenticity of the chain of transactions or of the legitimacy of the drug itself.

The DSCSA Path

- The Drug Supply Chain Security Act (DSCSA) is a prime example. Enacted by Congress on November 27, 2013, the regulation includes milestones that began in 2014 and continue through 2023. In 2018, many companies scrambled to comply with the deadline of providing unique product or serial codes on all prescription products. Many requirements will continue to be rolled out in phases with the deadline of full traceability via an electronic system by 2023. All parties in the supply chain should work together, meeting each milestone along the way to reach this goal.

- The purpose of the DSCSA is to provide a “track and trace” system that allows every drug in the U.S. to be traced from manufacturing through to the end user. The primary goal of the regulation is to ensure that all prescription drugs that reach the patient are safe and effective, and to make it easier to identify illegal or counterfeit drugs as they enter the supply chain. When the act is fully in force in 2023, every pharmaceutical product will bear a unique identifying code or number allowing it to be traced all the way through the supply chain.

How Can Pharmaceutical Companies Remain Compliant?
Every entity that deals with a drug is covered by the DSCSA. Manufacturers will be tasked with ensuring that the appropriate tracking methods are used on each product, transportation companies will need to document each step of the supply chain, and pharmacists must be able to track the entire path of the drug prior to dispensation. There are three main ways that companies can stay compliant:

- Documentation
The most important document is the T3—the DSCSA Transaction Report. The report is broken into three main sections: transaction information, transaction history, and transaction statement. The T3 must always be available. Whether an inspection is random or motivated by suspicion, inspectors may choose any product and ask to see the relevant T3.

- Verification
Some inspections may take place because a product in the pharmacist’s possession may be suspect. If this happens, the pharmacist must be prepared to produce supporting evidence for every step and every date set out in the T3.

- Penalties
A pharmacist unable to produce the required T3 documentation, or who produces inaccurate or inadequate documentation, may face penalties. Pharmacists may be fined and product may also be quarantined. Transporters, distributors, and manufacturers may also be penalized depending on the severity of the violation.

- Supply Chain Responsibility
As well as implementing a recording, archival, and recovery system allowing T3s to be produced at any point. Pharmacists must also closely examine all T3s to ensure accurate transaction reporting and that nothing in the T3 would give an observant, informed, and cautious recipient any reason to question the authenticity of the chain of transactions or of the legitimacy of the drug itself.

The DSCSA is a comprehensive set of regulations that will impact every stage of a pharmaceutical product’s lifecycle. Remaining compliant will require companies to have a systemic approach to meeting each of the core rules.
Meet the fastest way to calibrate.

Gone are the days of downtime. Now, with Dickson’s patent pending Replaceable Sensors, you can continuously monitor without interruption when it’s time to recalibrate. No need to power down or unplug your device—simply unplug the existing sensor and plug in the new sensor for instant calibration. For specifications, turn to page 21.
Since 1923, we’ve strived to incorporate the best and newest technologies into our products to bring you monitoring solutions of the highest caliber. We maintain the world’s widest selection of top quality instruments customized to fit your monitoring needs. From chart recorders to the new DicksonOne, we are constantly creating, which has made us an industry leader in environmental monitoring.
A capacitive 8” touchscreen offers our best user experience ever and now features customizable views, alarms, and more. Plus, with the option for DicksonOne compatibility, you get your data at your fingertips and wherever else you might need it.

The DicksonOne data logger collects temperature, humidity, and differential pressure data and automatically delivers it to the DicksonOne cloud application. From there, you can access your secure data from any internet-connected device, anywhere in the world. No more downloading data or changing charts—DicksonOne does all the work for you.

For more information on DicksonOne, flip to page _____

DicksonOne
DicksonOne is a cloud-based environmental monitoring system featuring an easy-to-use interface for monitoring your critical variables, allowing you to remain compliant without taking up too much of your time. Plus, with multiple alarm notification methods, you can ensure the right people are up-to-date on any excursion with time to act before something spoils. For more information, turn to page 8 or visit DicksonData.com/DicksonOne.
**DATA LOGGERS**

**INDICATORS**

No software required

- **MM120** Vaccine Alarm Thermometer
  - $55
  - 1-Probe Vaccine Alarm Thermometer, Battery Powered
  - Temperature Range: -50°F to 122°F (-50°C to 50°C)
  - Accuracy: ±1.8°F from 0°F to 122°F (±1°C from -18°C to 50°C)

- **MM125** Vaccine Alarm Thermometer
  - $66
  - 2-Probe Vaccine Alarm Thermometer, Battery Powered
  - Temperature Range: -58°F to 222°F (-50°C to 53°C)
  - Accuracy: ±1.8°F from 0°F to 122°F (±1°C from -18°C to 49°C)

- **D182** Infrared Thermometer
  - $60
  - Non-Contact Infrared Thermometer, Lightweight, Easy-Grip, Battery Powered
  - Temperature Range: -58°F to 98°F (-50°C to 35°C)
  - Accuracy: ±1.8°F of Reading or 2°C, Whichever is Greater

- **D186** Infrared Thermometer
  - $149
  - Non-Contact Infrared Thermometer, Lightweight, Easy-Grip, Battery Powered
  - Temperature Range: -67°F to 58°F (-55 to 20°C)
  - Accuracy: ±1°F from 32°F to 150°F (±0.6°C from 0°C to 60°C)

- **TC700** Touchscreen Handheld Indicator
  - $299
  - Instant Temperature Data, No-Slip Silicone Cover, Battery Powered
  - Temperature Range: -20°F to 150°F (-28°C to 65°C)
  - Accuracy: ±1.8°F from -22°F to 122°F (±1°C from -30°C to 50°C)

- **TH700** Touchscreen Handheld Indicator
  - $299
  - Instant Temperature/Humidity Data, No-Slip Silicone Cover, Battery Powered
  - Humidity Range: 0 to 95% RH (non-condensing)
  - Temperature Range: -40°F to 185°F (-40°C to 85°C)
  - Accuracy: ±0.1°F from 20°F to 122°F (±0.6°C from -6°C to 50°C)

**HIGH TEMP**

Compatible with DicksonWare 2.0

- **HT300** Waterproof, High Temperature Data Logger
  - $349
  - HACCP and FDA Compliant, USB Download, IP68 Rating
  - Temperature Range: -40°F to 25°F (-40°C to 125°C)
  - Accuracy: ±1.8°F from -40°F to 25°F (±1°C from -40°F to 125°C)

- **HT350** High Temperature Process Logger
  - $349
  - HACCP Approved, K-Thermocouple Probe, USB Download
  - Temperature Range: -40°F to 25°F (-40 to 125°C)
  - Accuracy: ±1.8°F from -22°F to 122°F (±1°C from -30°C to 50°C)

**DICKSONWARE**

Why go digital? That's easy.

DicksonWare allows you to store and share data easily with others in your organization by displaying downloaded data. For more information, visit DicksonData.com/Dicksonware.

**REPLACEABLE SENSORS (PATENT PENDING)**

Now, you have the option to calibrate the sensor as opposed to the unit. By splitting up the sensor from the data logger and chart recorder, we've created a plug-and-play device that will keep you in compliance and save you time and resources.

- **RKT/C/RKT2** Single/Dual K-Thermocouple Temperature Sensor
  - Temperature Range: -30°F to 200°F (-184°C to 93°C)
  - Accuracy: ±1.8°F from -22°F to 122°F (±1°C from -30°C to 50°C)
  - $110

- **RTHM/RTHM2** Single/Dual Glycol Thermistor Sensor
  - Temperature Range: -40°F to 185°F (-40°C to 85°C)
  - Humidity Accuracy: ±5% RH from 5.0 to 95% RH
  - $110

- **RTHM2** Platinum Temperature Sensor
  - Cable Length: 6ft (182cm)
  - Temperature Range: -148°F to 350°F (-100°C to 176°C)
  - Accuracy: ±0.1°F from -148°F to 350°F (±0.6°C from -100°C to 176°C)
  - $225

**DIFFERENTIAL PRESSURE**

We've expanded our catalog to include differential pressure monitoring with a new sensor for DicksonOne. Get data delivered to DicksonOne with programmable alerts via text, call, or email to let you know when your pressure is out of control.

- **RS080** Differential Pressure Sensor (2")
  - Measurement Range: ± 0.1 inches H₂O
  - Accuracy: ±0.01 inches H₂O
  - $149

- **RS081** Differential Pressure Sensor (0.5")
  - Measurement Range: ± 0.05 inches H₂O
  - Accuracy: ±0.005 inches H₂O
  - $149

**Note:** Replaceable sensors for DSB and chart recorders have different part numbers.
<table>
<thead>
<tr>
<th>Chart Recorders</th>
<th>Temperature</th>
<th>Humidity</th>
<th>Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>8” CHART RECORDERS</strong></td>
<td>KT8P0 $485</td>
<td>KT8P2 $545</td>
<td>PW860 $729</td>
</tr>
<tr>
<td>8” (203mm) Temperature Chart Recorder with Replaceable Sensor and Battery Operation; Range Based on Chart</td>
<td>KT8P1 $545</td>
<td>KT8P2 $695</td>
<td>PW861 $729</td>
</tr>
<tr>
<td>KT8P1 $545</td>
<td>KT8P2 $695</td>
<td>PW862 $729</td>
<td>PW864 $729</td>
</tr>
<tr>
<td>KT8P2 $545</td>
<td>KT8P5 $695</td>
<td>PW865 $729</td>
<td>PW866 $729</td>
</tr>
<tr>
<td>KT8P3 $660</td>
<td>KT8P6 $789</td>
<td>PW867 $729</td>
<td>PW867 $729</td>
</tr>
<tr>
<td>KT8P5 $695</td>
<td>KT8P7 $789</td>
<td>PW875 $865</td>
<td>oretical Temperature Chart Recorder with Replaceable Sensor, AC Power (Battery Back-Up), Display, Alarm, and Relays; Range Based on Chart</td>
</tr>
<tr>
<td>KT8P6 $789</td>
<td>KT8P7 $789</td>
<td>PW879 $524</td>
<td>PW879 $524</td>
</tr>
<tr>
<td>KT8P7 $789</td>
<td>KT8P8 $845</td>
<td>PW479 $524</td>
<td>PW479 $524</td>
</tr>
<tr>
<td><strong>Temperature &amp; Humidity</strong></td>
<td>TH8P0 $569</td>
<td>TH8P1 $569</td>
<td>PW470 $524</td>
</tr>
<tr>
<td>8” (203mm) Temperature &amp; Humidity Chart Recorder with Battery Operation and Replaceable Sensor, 32°F to 122°F (0°C to 50°C)</td>
<td>TH8P1 $569</td>
<td>TH8P2 $660</td>
<td>PW471 $524</td>
</tr>
<tr>
<td>TH8P2 $660</td>
<td>TH8P2 $660</td>
<td>PW472 $524</td>
<td>PW472 $524</td>
</tr>
<tr>
<td>TH8P3 $789</td>
<td>TH8P3 $789</td>
<td>PW473 $524</td>
<td>PW473 $524</td>
</tr>
<tr>
<td>TH8P5 $845</td>
<td>TH8P5 $845</td>
<td>PW474 $524</td>
<td>PW474 $524</td>
</tr>
<tr>
<td><strong>Pressure</strong></td>
<td>PW860 $729</td>
<td>PW861 $729</td>
<td>PW475 $524</td>
</tr>
<tr>
<td>8” (203mm) Pressure Chart Recorder, 0-100 PSI, 7-Day</td>
<td>PW862 $729</td>
<td>PW864 $729</td>
<td>PW475 $524</td>
</tr>
<tr>
<td>8” (203mm) Pressure Chart Recorder, 0-200 PSI, 24-Hr</td>
<td>PW865 $729</td>
<td>PW866 $729</td>
<td>PW476 $524</td>
</tr>
<tr>
<td>8” (203mm) Pressure Chart Recorder, 0-200 PSI, 7-Day</td>
<td>PW867 $729</td>
<td>PW867 $729</td>
<td>PW477 $524</td>
</tr>
<tr>
<td>8” (203mm) Pressure Chart Recorder, 0-300 PSI, 24-Hr</td>
<td>PW867 $729</td>
<td>PW875 $865</td>
<td>PW478 $524</td>
</tr>
<tr>
<td>8” (203mm) Pressure Chart Recorder, 0-100 PSI, 24-Hr</td>
<td><strong>4” CHART RECORDERS</strong></td>
<td><strong>Temperature</strong></td>
<td><strong>Pressure</strong></td>
</tr>
<tr>
<td><strong>Temperature</strong></td>
<td>SL4100 $279</td>
<td>SL4100 $279</td>
<td>PW470 $524</td>
</tr>
<tr>
<td>4” (101mm) Portable Battery Operated Temperature Chart Recorder with Display, 0°F to 100°F (-18°C to 37°C)</td>
<td>SL4200 $279</td>
<td>SL4200 $279</td>
<td>PW471 $524</td>
</tr>
<tr>
<td><strong>Humidity</strong></td>
<td>SL4300 $279</td>
<td>SL4300 $279</td>
<td>PW472 $524</td>
</tr>
<tr>
<td>4” (101mm) Portable Battery Operated Temperature Chart Recorder with Display, 0°F to 100°F (-18°C to 37°C)</td>
<td>PW473 $524</td>
<td>PW473 $524</td>
<td>PW475 $524</td>
</tr>
<tr>
<td><strong>Pressure</strong></td>
<td>PW474 $524</td>
<td>PW474 $524</td>
<td>PW476 $524</td>
</tr>
<tr>
<td>4” (101mm) Pressure Chart Recorder, 0-100 PSI, 7-Day or 24-Hr</td>
<td>PW475 $524</td>
<td>PW475 $524</td>
<td>PW477 $524</td>
</tr>
<tr>
<td><strong>4” CHART RECORDERS</strong></td>
<td><strong>Temperature</strong></td>
<td><strong>Pressure</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Temperature</strong></td>
<td>SC367 $279</td>
<td>SC367 $279</td>
<td>PW470 $524</td>
</tr>
<tr>
<td>3” (76mm) Temperature Chart Recorder, -54°F to 122°F (-25°C to 50°C)</td>
<td>SC368 $279</td>
<td>SC368 $279</td>
<td>PW471 $524</td>
</tr>
<tr>
<td><strong>Humidity</strong></td>
<td>SC367 $279</td>
<td>SC368 $279</td>
<td>PW472 $524</td>
</tr>
<tr>
<td>3” (76mm) Temperature Chart Recorder, 4°F to 50°F (-15°C to 10°C)</td>
<td>SC368 $279</td>
<td>SC368 $279</td>
<td>PW473 $524</td>
</tr>
<tr>
<td><strong>Pressure</strong></td>
<td>SC367 $279</td>
<td>SC368 $279</td>
<td>PW474 $524</td>
</tr>
<tr>
<td>3” (76mm) Temperature Chart Recorder, 22°F to 68°F (-5°C to 20°C)</td>
<td>SC368 $279</td>
<td>SC368 $279</td>
<td>PW475 $524</td>
</tr>
<tr>
<td><strong>Pressure</strong></td>
<td>SC367 $279</td>
<td>SC368 $279</td>
<td>PW476 $524</td>
</tr>
<tr>
<td>3” (76mm) Temperature Chart Recorder, 5°F to 96°F (0°C to 35°C)</td>
<td>SC368 $279</td>
<td>SC368 $279</td>
<td>PW477 $524</td>
</tr>
<tr>
<td><strong>Pressure</strong></td>
<td>SC367 $279</td>
<td>SC368 $279</td>
<td>PW478 $524</td>
</tr>
<tr>
<td>3” (76mm) Temperature Chart Recorder, 76°F to 122°F (25°C to 50°C)</td>
<td>SC368 $279</td>
<td>SC368 $279</td>
<td>PW479 $524</td>
</tr>
</tbody>
</table>

**CHARTS & PENS**

Don’t forget to reorder charts for your recorders before they run out, and always make sure to have extra pens on hand in case their ink runs dry. Visit DicksonData.com/charts or call 630.563.4210 to reorder today!
In March 2019, the U.S. House Aviation Subcommittee held a hearing discussing the future of aviation. The hearing, entitled “Looking Forward: Aviation 2050,” met to discuss the potential evolution of the industry and explore how emerging technologies will change the domestic airspace.

The Chair of the House Committee on Transportation and Infrastructure, Peter DeFazio, and Chair of the Subcommittee on Aviation, Rick Larsen, said that the goal of the hearing was to “explore the future of U.S. aviation and the National Airspace System (NAS), including how the NAS is evolving as a result of new aviation and aerospace technologies, as well as how new and future entrants (including unmanned aircraft, passenger air taxis, and supersonic aircraft) will change our airspace.”

Many experts and leaders represented the industry, offering their perspectives on the potential impact of unmanned aircraft in the future of domestic aviation. Key witnesses at the hearing were:

- Dr. Eli Dourado, Head of Global Policy and Communications for Boom Supersonic
- Dr. Eric Allison, Head, Elevate in Uber Technologies, Inc.
- Ms. Diana Cooper, Senior Vice President, Policy & Strategy, PrecisionHawk, Inc.
- Captain Joe DePete, President, Air Line Pilots Association, International
- Mr. David McBride, Director, Armstrong Flight Research Center, National Aeronautics and Space Administration

While these key witnesses asked to present testimony, many other interested parties also submitted written statements on their positions. Topics discussed included infrastructure, emerging technologies, international competition, and regulatory structures.

Much of the discussion centered around exploring what 2050 could look like with an airspace that includes manned aircraft (traditional, supersonic and otherwise) and unmanned systems. Potential scenarios included the use of drones to deliver packages or even consumer air taxis for shorter travel distances.

Despite these incredible visions, many also expressed concerns around safety. The general aviation accident rate has decreased by more than 85% in the past several decades, and there is much uncertainty as to how the integration of unmanned aircraft will impact not only the overall safety rate, but also how these “automated” versions will interact with existing manned aircraft.

Other key comments were centered around the economy. According to the Alliance for Drone Innovation, the economic impact of unmanned aircraft into the NAS will total more than $13.6 billion in the first three years of integration and will grow sustainably for the foreseeable future, cumulating to more than $82.1 billion and more than 103,000 jobs by 2025.

David McBride, director of the National Aeronautics and Space Administration (NASA) Armstrong Flight Research Center, envisioned 2050 as a “world enabled by aviation, where you can fly across the country in two hours, or to the other side of the world in five. A world with...U.S. companies capitalizing on this vision to deliver these products and develop aviation services of the future, creating high quality manufacturing jobs.”

While there is much to look forward to in the future of aviation with the addition of intelligent unmanned aircraft, there will inevitably be new challenges along the way.

For aviation manufacturers and MROs, these potential changes will certainly impact environmental monitoring processes. The production and maintenance of unmanned aircraft will require the same attention to detail in ensuring consistent conditions so that each product performs to specification, every time. Additionally, evolving safety concerns are almost guaranteed to result in newer, more specific regulations, requiring systems that ensure minimal (if any) excursions.

Perspectives on Unmanned Aviation
MEET YOUR REGIONAL SALES DIRECTOR

Hilary Stapula
Western Region

Hilary joined Dickson in 2016 and in 2018 became Regional Sales Director. Prior to Dickson, Hilary was a Business Development Manager at a $1.4B industrial distributor. She also previously held roles in Product Management at a high precision cutting tool manufacturer.

“When our daughter was little more than a year old, she had major surgery to remove the lower left lobe of her lung. This event had a profound impact on me. As someone who’s never broken a bone or had a cavity, I was suddenly diving into the deep end of healthcare! She had an amazing team of professionals who saved her life; not to mention the pharmaceuticals and medical devices used in her procedure and the following days. Through this experience, I gained the utmost respect for the people who serve in these industries whom I am now fortunate enough to work with every day. It is my honor to serve my customers so that they may improve and save the lives of others.”

Hilary specializes in complex accounts that are looking to centralize environmental monitoring under one system. In addition to healthcare, pharmaceutical and medical devices, she also works with distribution, food, government and OEM.

In her free time, you can find Hilary composing her beautiful watercolor paintings, many of which have been featured in exhibits in the Chicagoland area.

To get in touch with Hilary, send an email to hstapula@dicksondata.com or call 630.563.4239.
Millions of data points at your fingertips.

With the DicksonOne mobile app, you can instantly access all of your data and location information in the cloud.

Anywhere. Anytime.

Download the FREE DicksonOne mobile app today
Differential Pressure Sensors are now available for use with our cloud-based monitoring system. Get data delivered to DicksonOne with programmable alerts via text, call, or email to let you know when your pressure is out of control.

Available in ½” and 2” models.

For more information, visit DicksonData.com or call 630.563.4210 to speak with a product expert today.

All prices are subject to change without notice. In the event of a printing error, Dickson reserves the right to charge the correct price. All shipments ship 2nd day unless otherwise requested.